



## **Five-Year Review Report**

### **Second Five-Year Review Report for Amoco Chemicals (Joliet Landfill) Will County, Illinois**

**September 2010**

**PREPARED BY:**

**Illinois Environmental Protection Agency  
Springfield, Illinois**

Approved by:

Date:

A handwritten signature in black ink, appearing to read "Richard C. Karl", written over a horizontal line.

Richard C. Karl, Director  
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9/23/2010

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# Five-Year Review Report

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## List of Acronyms

AECOM	Formerly RETEC, BP Amoco Technical Consultants
AOC	Administrative Order on Consent
ARARs	Applicable or Relevant and Appropriate Requirements
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CFR	Code of Federal Regulations
CQAP	Construction Quality Assurance Plan
HDPE	High Density Polyethylene
IEPA	Illinois Environmental Protection Agency
IPCB	Illinois Pollution Control Board
Facility	Existing manufacturing facility (formerly BP Amoco Chemicals plant)
FML	Flexible Membrane Layer
GWOU	Groundwater Operable Unit
HSU	Hydrostratigraphic Units
LFOU	Landfill Operable Unit
NCP	National Contingency Plan
NPL	National Priorities List
O&M	Operation and Maintenance
GCL	Geosynthetic Clay Layer
PRP	Potentially Responsible Party
QA	Quality Assurance
PRG	Preliminary Remediation Goal, proposed in the Record of Decision
QAPP	Quality Assurance Project Plan
RA	Remedial Action
RAO	Remedial Action Objective
RCRA	Resource Conservation and Recovery Act
RD	Remedial Design
RI/FS	Remedial Investigation/Feasibility Study
ROD	Record of Decision
Site	BP Amoco Chemicals Landfill Site in Joliet, Illinois
SVOC	Semi-Volatile Organic Compound
TBC	To-Be-Considered
gpm	Gallons per minute
mg/L	milligrams per liter (parts per million)
µg/ml	micrograms per milliliter (parts per million)
U.S. EPA	U.S. Environmental Protection Agency
VOC	Volatile Organic Compound

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## **Executive Summary**

Two operable units have been identified for the Amoco Chemicals (Joliet Landfill) Site in Joliet, Illinois (herein after referred to as the "Site"). The Landfill Operable Unit (LFOU or OU1) remedy includes: construction of a landfill cap on the North and South Landfills that conforms to the requirements of RCRA, installation of a gas venting system, installation of new leachate collection systems at the down-gradient side of the South Landfill and at two locations of historical leachate seepage on the southern end of the North Landfill, installation of surface water control measures to minimize erosion and infiltration, interim groundwater monitoring of the monitoring well network at the Site to assess LFOU remedy effectiveness, physical access restrictions, and institutional controls to limit land use. Construction of the LFOU was started on May 24, 2000. As of January 23, 2001, the landfill cap was substantially completed. The other operable unit is for contaminated groundwater at the Site. The Groundwater Operable Unit (GWOU or OU 2) will be evaluated under a separate feasibility study, proposed plan, and Record of Decision, yet to be issued. The triggering action date for this second five-year review is the date of the first five-year review which is September 29, 2005.

The constructed remedy at the Landfill Operable Unit will be protective of human health and the environment in the long term upon attainment of groundwater cleanup goals. In the short term, exposure pathways that could result in unacceptable risks are being controlled through institutional controls, site access restrictions, and O&M Plan activities. However, the leachate seeps need to be expeditiously addressed so that the remedy will be protective for an intermediate period.

A site-wide protectiveness determination will be made after the GWOU remedy has been implemented. Based on groundwater flow direction, wells near the Site are not expected to be affected by the Site.

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## Five-Year Review Summary Form

SITE IDENTIFICATION		
Site name (from WasteLAN): Amoco Chemicals (Joliet Landfill)		
EPA ID (from WasteLAN): ILD 002 994 259		
Region: 5	State: IL	City/County: Joliet, Will County
SITE STATUS		
NPL status: <input checked="" type="checkbox"/> Final <input type="checkbox"/> Deleted <input type="checkbox"/> Other (specify)		
Remediation status (choose all that apply): <input checked="" type="checkbox"/> Under Construction <input checked="" type="checkbox"/> Operating <input type="checkbox"/> Complete		
Multiple OUs? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		Construction completion date:
Has site been put into reuse? YES <input checked="" type="checkbox"/> NO		
REVIEW STATUS		
Lead agency: EPA <input checked="" type="checkbox"/> State <input type="checkbox"/> Tribe <input type="checkbox"/> Other Federal Agency _____		
Author name: Eric Runkel		
Author title: Environmental Protection Engineer		Author affiliation: Illinois EPA
Review period: April 3, 2010 to September 2010		
Date(s) of site inspection: August 10, 2010		
Type of review: <input checked="" type="checkbox"/> Post-SARA <input type="checkbox"/> Pre-SARA <input type="checkbox"/> NPL-Removal only <input type="checkbox"/> Non-NPL Remedial Action Site <input type="checkbox"/> NPL State/Tribe-lead <input type="checkbox"/> Regional Discretion		
Review number:    1 (first) <input checked="" type="checkbox"/> 2 (second) <input type="checkbox"/> 3 (third) <input type="checkbox"/> Other (specify) _____		
Triggering action: <input checked="" type="checkbox"/> Actual RA On-site Construction <input type="checkbox"/> Actual RA Start <input type="checkbox"/> Construction Completion <input type="checkbox"/> Previous Five-Year Review Report <input type="checkbox"/> Other (specify) _____		
Triggering action date (from WasteLAN): September 29, 2005		
Due date (five years after triggering action date): September 29, 2010		

\* ["OU" refers to operable unit.]

\*\* [Review period should correspond to the actual start and end dates of the Five-Year Review in WasteLAN.]

## **Five-Year Review Summary Form, cont'd.**

### **Issues:**

Need to develop Institutional Controls Plan and Evaluate the IC Study submitted by BP Amoco

### **Recommendations and Follow-up Actions:**

Develop IC Plan Evaluate the IC Study submitted by BP Amoco to determine whether existing implemented institutional controls need to be enhanced.

### **Protectiveness Statement:**

The remedy at the Landfill Operable Unit is expected to be protective of human health and the environment in the long term upon attainment of groundwater cleanup goals. In the short term, exposure pathways that could result in unacceptable risks are being controlled through institutional controls, site access restrictions, and O&M activities. However, the leachate seeps need to be expeditiously addressed so that the remedy will be protective for an intermediate period.

The institutional controls that are in place include restrictive easements and covenants, and Environmental Land Use Covenants limiting on-site groundwater use, and limitations on the disturbance of the landfills and other activities that might interfere with the implemented remedy. The continued presence of Flint Hills personnel at the operating chemical production facility and BP Amoco personnel at the landfill area, and physical access constraints provides security for the Site property.

A site-wide protectiveness determination will be made after the GWOU remedy has been implemented.

### **Other Comments:**

None.

### **Environmental Indicator Data:**

Date of last Regional review of Human Exposure Indicator (from WasteLan): 04/26/2010

Human Exposure Survey Status: Current Human Exposure Controlled

Date of last Regional review of Groundwater Migration Indicator (from WasteLan): 04/26/2010

Groundwater Migration Survey Status: Insufficient Data to Determine Contaminated Groundwater Migration Control Status.

Ready for Reuse Determination Status (from WasteLan): Not Ready for Anticipated Use

**Amoco Chemicals (Joliet Landfill) Site  
Joliet, Illinois  
First Five-Year Review Report**

**I. Introduction**

The purpose of the five-year review is to determine whether the remedy at a Site is or is expected to be protective of human health and the environment. The methods, findings, and conclusions of reviews are documented in Five-Year Review reports. In addition, Five-Year Review reports identify issues found during the review, if any, and recommendations to address them.

The Illinois Environmental Protection Agency (Illinois EPA) is preparing this five-year review pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) §121 and the National Contingency Plan (NCP). CERCLA §121 states:

*If the President selects a remedial action (RA) that results in any hazardous substances, pollutants, or contaminants remaining at the site, the President shall review such RA no less often than each five years after the initiation of such RA to assure that human health and the environment are being protected by the RA being implemented. In addition, if upon such review it is the judgment of the President that action is appropriate at such site in accordance with section [104] or [106], the President shall take or require such action. The President shall report to the Congress a list of facilities for which such review is required, the results of all such reviews, and any actions taken as a result of such reviews.*

The U.S. EPA interpreted this requirement further in the NCP; 40 Code of Federal Regulations (CFR) §300.430(f)(4)(ii) states:

*If a RA is selected that results in hazardous substances, pollutants, or contaminants remaining at the site above levels that allow for unlimited use and unrestricted exposure, the lead agency shall review such action no less often than every five years after the initiation of the selected RA.*

The Illinois Environmental Protection Agency conducted a statutory, five-year review of the Site, focusing mainly on the RA for the Landfill Operable Unit implemented at the Site. Since remedial actions have not yet begun at GWOU (or OU 2), the remedy there could not be evaluated at this time. This report documents the results of the review.

This is the second five-year review for the Site. The triggering action for this review is the date of the first five-year review which is September 29, 2005

## II. Site Chronology

**Table 1. Chronology of Site Events**

<b>Event</b>	<b>Date</b>
Waste Disposal Operations at North Landfill	Approx. 1958 - mid 1970s
Waste Disposal Operations at South Landfill	Approx. 1973 - 1975
Initial discovery of contamination	July 1974
Site finalized on National Priorities List (NPL)	February 21, 1990
Consent Decree Requiring Remedial Investigation/Feasibility Study	April 7, 1994
Illinois EPA and BP Amoco Chemical Company agree to split the Site into two units: Landfill Operable Unit (LFOU or OU1) and Groundwater Operable Unit (GWOU or OU2)	Early 1998
Illinois EPA LFOU Remedial Investigation completed	March 25, 1998
Illinois EPA LFOU Focused Feasibility Study completed	October 5, 1998
Record of Decision (ROD) signature for LFOU	July 15, 1999
Remedial Design (RD) for LFOU complete	March 16, 2000
Remedial Action Work Plan for construction of the LFOU remedy approved	March 20, 2000
RD/RA Supplemental Consent Decree for the Landfill Operable Unit Lodged	April 24, 2000
Construction of LFOU remedy started	May 24, 2000
Construction substantially completed at LFOU	January 23, 2001
1 <sup>st</sup> Five-Year Review completed	September 29, 2005
Forcemain completed to send leachate to POTW	June 26, 2007
2 <sup>nd</sup> Five-Year Review completed	September 2010

## III. Background

### III.A Physical Characteristics

A manufacturing facility formerly owned by the BP Amoco Chemical Company ("BP Amoco") is located approximately one mile southeast of the intersection of Illinois Route 6 and Interstate Highway 55. It is an active chemical manufacturing facility located on approximately 750 acres of land in a semi-rural industrial/agricultural area. In May 2004 that manufacturing facility was acquired by Flint Hills Resources ("Flint Hills") from BP Amoco.



The manufacturing facility has been in continuous operation since approximately 1958, manufacturing purified isophthalic acid, trimellitic anhydride, maleic anhydride, and polystyrene. The manufacturing wastes generated by the facility were contained in thin-wall, rust away drums and disposed in two landfills (North and South landfills), which were closed in the mid 1970s. The closed landfill areas cover approximately 26 acres (see Figure 1).

The former landfill areas, consisting of two parcels which are roughly triangular in shape, are located in the southern portion of the property. The landfills are located about 600 feet west and northwest of the Des Plaines River on a small bluff. Moving toward the east from the landfills there is a 25-30 foot steep drop in elevation and then the land gently slopes down another 30 feet towards the River.

The landfills are located within an industrial use area currently zoned as "intensive industrial", with adjacent farm fields and "rural residential" land use. The landfills have access that is restricted and monitored through the manufacturing facility's security system. Access is also restricted by the south gate, which borders private property. There is a potential for site access from the river.

### **III.B Land and Resources Use**

The contents of the landfills include approximately 5,900,000 cubic feet (218,518 cubic yards) of wastes, some in 55-gallon drums, including organics, inorganics, heavy metals, acids, and general plant refuse. U.S. EPA suggested in 1983 that 135,000 tons of chemical wastes were probably contained in the landfills, including plasticizers, resins, elastomers, ethers, esters, ketones, aldehydes, and inorganic chemicals (such as salts, asbestos, acids, and heavy metals.).

Specifically, BP Amoco records indicate disposal of solid wastes containing isophthalic, terephthalic, benzoic, toluic and trimellitic acids, aromatic aldehydes, cobalt and manganese acetates, cobalt, manganese, cerium, and "other metal" oxides, sodium bromide, zinc, and "other metal salts", acetic acid, "tar and high boilers", and polystyrene. Liquid slurries and "semisolid" wastes were also disposed which contained many of the above constituents as well as dimethylterephthalate, styrene, mineral oil and rubber, chromium, iron, and copper. Records also indicate that activated carbon (with associated isophthalic and terephthalic acids), construction materials, insulation, and general plant refuse were placed in the landfills. Solid wastes and liquid slurries were reported to have low pH, in the range of 2.5 to 4.8. Because no sampling of the landfill wastes was conducted during the Remedial Investigation and because there is evidence that some hazardous wastes were disposed in the landfills, all landfill contents were assumed to be hazardous wastes, as defined by RCRA.

The northern or main landfill was operated by clearing the shallow soils associated with the former farm land and leveling the areas for disposal of wastes. No liner or clay material was placed beneath the wastes in the northern landfill. In some cases excavations or pits were used for disposal of material. Aerial photos indicate one excavation (approximately 200 feet in diameter) along the east side of the landfill appears to be over 30 feet in depth, while the water table is approximately 20 feet in depth for that area.

In general, waste material, including drums, solids, and some liquids, were placed on the ground surface or in excavations and then covered with stockpiled dirt. The cover material for the northern landfill was excavated from the area now occupied by the southern, smaller landfill area.

In 1972, a large portion of the landfill was closed. This area was leveled, sloped toward the river, and covered with up to two feet of clayey soil and two feet of clay to reduce infiltration. In 1973, the smaller, southern landfill area began receiving process waste. The clayey soil which was excavated in this smaller triangular area was eventually used as cover material for the landfill to the north. The bottom elevation of the southern landfill area (top of excavated clays) is approximately seven feet below the water table at the north edge. Disposal into the south landfill continued until 1975. The southern landfill was covered in the 1970s.

### **III.C Initial Response**

There have been several documented releases associated with the Site, dating back to July 2, 1974, when the Illinois EPA observed a reddish leachate discharging into the Des Plaines River and traced its origin to the landfill area.

Two separate leachate sources were later identified, one from the closed, the other from the then still active landfill. One of the sources was actually a natural stream, contaminated with seepage from the landfills. This stream contained concentrations of several contaminants in excess of Illinois effluent standards for biological oxygen demand, suspended solids, iron, manganese, phenolics and dissolved solids. Elevated levels of alkalinity, chemical oxygen demand, total organic carbon, chlorides, and cobalt were also detected.

A leachate recovery system was installed by BP Amoco in March 1975. The system was designed to intercept leachate moving laterally down gradient from the bluff area toward the Des Plaines River in the shallow groundwater. The system was upgraded in 1988. Site visits during the mid-1990s indicated the leachate and groundwater was escaping containment as evidenced by iron staining at two locations on the ground surface at the south end of the collection system, and at a small stream outcrop downgradient of the collection system near the backwater area (slough area) east of the landfill.

In March 1987, the U.S. EPA scored the landfills using the hazard ranking system (HRS) and assigned the Site a score of 39.44. A facility which receives a score of 28.5 or higher is a candidate for the National Priorities List (NPL). The Site was placed on the NPL under CERCLA on February 21, 1990.

On April 7, 1994, a Consent Decree (CD) requiring a Remedial Investigation/Feasibility Study (RI/FS) was entered. BP Amoco initiated the RI/FS as stipulated by the CD. In early 1998, an agreement between the Illinois EPA and BP Amoco split the Site into two operable units: the Landfill Operable Unit and the other for the contaminated groundwater (Groundwater Operable Unit). This decision enabled the development of a Focused Feasibility Study (FFS) concerning only capping the landfills. Due to the dispute resolution of irreconcilable differences, the Illinois EPA exercised its rights under the CD and relieved BP Amoco of the task of conducting the

RI/FS. The RI was completed on March 25, 1998, and the FFS on October 5, 1998. Illinois EPA completed a ROD for the landfill operable unit on July 15, 1999.

A Supplemental Consent Decree for Remedial Design/Remedial Action (RD/RA) for the Landfill Operable Unit was lodged on April 24, 2000. The Remedial Design was completed on March 16, 2000. The Remedial Design specified a cap that conforms to the requirements of RCRA, to be placed on the north and south landfills, and installation of a new leachate collection system along the down gradient side of the south landfill and at the southern end of the north landfill at two locations of historical leachate seepage.

Construction was started on May 24, 2000. The project suffered numerous delays due to weather, engineering design changes, and a labor strike which resulted in replacement of the construction contractor. As of January 23, 2001, the landfill cap was substantially completed. The final construction inspection was conducted on August 23, 2001.

The manufacturing facility north of the landfill (formerly owned by BP Amoco Chemical; sold to Flint Hills Resources in 2004) is conducting remedial activities under the Illinois EPA Site Remediation Program (SRP). The manufacturing plant portion of the facility entered into the Illinois EPA Pre Notice program (now known as the SRP) officially in November of 1993, primarily in response to a xylene spill in the southeastern portion of the plant area. Groundwater data for the plant area was collected in 1992, 1993 and 1994. This information was used to prepare a Corrective Action Plan that was submitted to the Illinois EPA. In 1998, BP Amoco installed a groundwater recovery trench (GWIT) located to the east of the northern third of the north landfill, and extending north into the manufacturing plant property. The trench is not part of the NPL site remedy.

### **III.D Basis For Taking Action**

The shallow aquifer system beneath the Site consists of two hydrostratigraphic units; unconsolidated glacial deposits (Henry formation), denoted by HSU1, and shallow limestone and dolomite bedrock formations, denoted by HSU2. Both are in hydraulic communication under portions of the landfill. HSU1 has a groundwater divide on the western edge of the north landfill. The upper portion of HSU2 beneath the Site is highly fractured with dissolution and mineralization features present at depth.

A third hydrostratigraphic unit beneath the Site (HSU3), comprising the Scales Shale or Brainard Shale formations, forms a regional and local aquitard between the shallow aquifer system and the deeper bedrock aquifer. The Scales Shale is disrupted by the faulting associated with the Sandwich Fault Zone in the Site area. The Sandwich fault zone strikes southeast to northwest under the landfill. As a result of the fault, in the north portion of the Site the Scales Shale is found at shallow depths (less than 50 feet) and forms the bottom of the shallow aquifer. In the south portion of the Site where the Sandwich Fault has displaced the Scales Shale, the Brainard Shale is found at depths of approximately 100-120 feet. The Brainard shale forms the bottom of the shallow aquifer in the south area of the Site.

Below HSU3 is the regional deep aquifer referred to as the Galena-Platteville-Glenwood-St. Peter Aquifer. The manufacturing facility uses water supplied from production wells completed in this deep aquifer.

Groundwater in the glacial deposits and shallow bedrock generally flows east toward the Des Plaines River. Currently, there are seven residences using groundwater within one mile of the landfill. Based on groundwater flow direction, the wells are not expected to be affected by the landfills. One additional well is located less than one mile southeast of the landfill on the opposite side of the Des Plaines River. The well appears to be located on Stepan Chemical property.

The groundwater in HSU1 and in HSU2 has been contaminated by landfill related contaminants. The depth of contamination of site groundwater below the upper-most weathered and fractured portions of the shallow limestone and dolomite formations is unknown due to lack of monitoring well data. In general, the highest concentrations of contaminants are detected directly adjacent to the landfill boundaries by monitoring wells completed within the shallow glacial deposits of HSU1.

Contaminants of concern for the Site are organic compounds of benzene, toluene, ethylbenzene, xylene, phenol, trimellitic acid, terephthalic acid, benzoic acid, isophthalic acid, phthalic acid, toluic acid, maleic acid, naphthalene, and inorganic compounds of arsenic, cadmium, lead, iron, zinc, cobalt, manganese and chromium. These contaminants have been detected in waste samples, surface soils, groundwater, leachate seep soils, surface water, and in the leachate collection system sump at the Site. The contaminants detected at the Site are consistent with those that were documented in disposal records and spill reports for the facility.

#### **IV. Remedial Actions**

##### **IV.A Remedy Selection, Design, and Implementation**

###### **IV.A.1 Record of Decision for Landfill Operable Unit**

On July 15, 1999, the Illinois EPA signed a ROD selecting a remedy for the LFOU with the concurrence of the U.S. EPA provided on June 24, 1999. The remedial response objectives are as follows:

- Prevent the public from incidental ingestion of and direct contact with soil/waste containing contamination in excess of federal and state soil standards or criteria, or which pose a threat to human health;
- Prevent the public from inhalation of airborne contaminants (from disturbed soil waste) in excess of federal and state air standards or criteria, or which pose a threat to human health; and
- Prevent the further migration of contamination from the landfill that would result in degradation of groundwater or surface water to levels in excess of federal and state drinking water or water quality standards or criteria or which poses a threat to human health or the environment, to the extent feasible and practical.

The major components of the 1999 ROD included:

- o The construction of a RCRA compliant landfill cap conforming to the requirements of 35 Ill. Adm. Code 724;
- o Installation of a gas venting system;
- o Installation of a new leachate collection system down gradient of the southern landfill and a new leachate collection system down gradient of the southern portion of the north landfill;
- o Installation of surface water management features to minimize erosion and infiltration;
- o Groundwater monitoring;
- o Maintenance of physical access restrictions;
- o Real estate deed restrictions.

#### **IV.A.2 Supplemental Consent Decree For LFOU Remedial Design And Remedial Action**

A Supplemental Consent Decree ("Supplemental CD") was lodged on April 24, 2000 with BP Amoco Chemical Company. The Supplemental CD committed BP Amoco Chemical to perform the Work as referenced in a Remedial Action Work Plan. The RA Work Plan required construction and implementation of the remedy set forth in the ROD, and achievement of the Performance Standards in accordance with the Supplemental CD, the ROD, the Statement of Work (SOW), and as set forth in the design plans and specifications.

#### **IV.A.3 Remedial Design / Remedial Action for LFOU Remedy**

On March 16, 2000, the Illinois EPA approved the 100% Remedial Design. The Remedial Action Work Plan was approved on March 20, 2000, and construction of the LFOU remedy started on May 24, 2000.

#### **IV.A.4 Groundwater Operable Unit Record of Decision**

Two operable units have been identified at this site--one for the landfills and the other for the contaminated groundwater. The groundwater operable unit, when formalized, will be evaluated under separate documents, and will be included in the next Five Year Review due in 2015. A remedy for the GWOU will be established by another Record of Decision to be developed and issued before the next Five Year Review in 2015. Development of a ROD for the GWOU will include investigation of groundwater monitoring data and a determination of the LFOU remedy's effectiveness in preventing leaching of contaminants from site waste materials into groundwater.

### **IV.B. Description of the Current Remedy**

#### **IV.B.1 Final Cover System**

The Joliet Landfill cover system is comprised of the following components: a vegetative layer of sustained plant growth, a topsoil layer, a rooting zone layer, a drainage layer, a flexible membrane layer (FML); a geosynthetic clay layer (GCL); a passive gas venting system; and a

leachate collection system upgrade for the South Landfill. In addition, seep collection tile was also installed along the bluff area to capture two areas of historical seepage.

From top to bottom, the cover system consists of the following materials and layer thicknesses:

- Vegetation Cover;
- Topsoil (6 inches);
- Rooting Zone (30 inches including a 12 inch protective layer);
- Geocomposite drainage layer with geotextile;
- Flexible Membrane Liner \*;
- Geocomposite Clay Liner;
- Grading Layer, including a 6 inch bedding layer

\* Geomembrane consists of 40-mil LLDPE (Linear low density polyethylene)

#### **IV.B.2 Storm / Surface Water Drainage**

One requirement for the LFOU remedy was implementing surface water control measures to minimize erosion and infiltration. Surface water drainage on the landfill cap is controlled by slopes promoting sheet flow towards diversion berms on the landfill cap which direct the runoff to drainage swales on the east side of the landfill or to the Quad Pond Area. The Quad Pond Area is adjacent to and directly west of the landfill. The Quad Pond Area is the location of the former wastewater treatment lagoons for the BP Amoco Chemical Wastewater Treatment Plant for the manufacturing facility. The Quad Ponds were removed from service and closed under the Illinois EPA Site Remediation Program (SRP). In conjunction with the landfill construction project, the Quad Ponds were regraded and a storm water retention basin was constructed in the Quad Area. The storm water detention basin has a concrete storm water outlet structure and HDPE culvert that directs the discharge to a nearby natural drainage way.

Water that infiltrates through the top soil and rooting zone layer of the landfill cap is diverted to perimeter toe drains. The toe drains have several outlets which discharge to the ground surface outside the landfill perimeter or connect to underground piping for routing to the storm water drainage system.

#### **IV.B.3 Landfill Gas Venting System**

As part of the LFOU construction, a passive landfill gas venting system was installed on the landfills. The 100% Design Report characterized the landfill site as having minimal potential for generating landfill gas. The purpose of the gas venting system is to provide effective landfill gas migration control and to prevent physical disruption of landfill cover components resulting from gas migration. A network of gas vents was installed at a grid density of approximately one vent per acre. Existing landfill piezometers were converted to gas probes, and some new probes were installed to monitor for gas build up and lateral migration under the cover.

#### **IV.B.4 Leachate Collection System**

The leachate collection system pumps collected leachate to the offsite POTW wastewater treatment plant (operated by the City of Joliet). The original leachate collection system was installed by BP Amoco around the mid 1970s, and was upgraded to expand the leachate collection piping in the south landfill, abandon and replace the collection sumps in the south landfill with a new leachate pump station (EG-307 pump station), and replace old forcemain and clean-outs with new double walled-transfer pipe and forcemain. The work also included installation of a gravity seep collection system along the forcemain trench, as well as extension up the slope of the bluff on the east side of the landfill to two areas where surficial seeps have occurred. The gravity line drains to the groundwater interceptor trench (GWIT) system, thence to the on-site wastewater treatment plant. Clean-out structures were installed along both the gravity and forcemain lines to allow for maintenance of the system.

#### **IV.C General Operation and Maintenance (O&M) Requirements**

##### **IV.C.1 Landfill Cover System**

The Illinois EPA has conducted periodic Site visits to observe Site conditions including the landfill cover system. The most recent Site inspection by IEPA was on August 10, 2010. Perimeter gates and locks were intact and access was being restricted. The condition of the south landfill cover and slopes was good. At the north landfill, an area where gully erosion was noted at the south storm water diversion dike on previous visits had been repaired with placement of additional soil to redirect the flow along the dike. The storm water detention basin was discharging approximately 50-100 gpm through the orifice at the outlet structure with no unusual conditions noted at the outfall. The storm water drainage ditch along the east side of the north landfill ("East Ditch"), and the drainage swale along the east side of the south landfill were dry, with the riprap in the East Ditch in good condition and both drainage ditch outlets normal. The toe drain outlets for the south landfill and the outlets on the west and northeast side of the north landfill were ponded with no unusual conditions noted.

At the south landfill leachate collection manhole, contributing flows into the manhole were noted as follows: the shallowest collection pipe discharge from the south was dry with no flow. The middle collection pipe from the north had a trickle of flow discharging to the manhole. The deep collection pipe from the west, which is the old existing leachate collection pipe that pre-dates the landfill cap project, was discharging approximately 12 gpm to the leachate collection manhole. The leachate collection system manhole drains through approximately 100 feet of double-walled gravity pipe to the leachate collection system pump station designated as EG-307. Two areas along the bluff, where gravity seep collection pipe was installed at the locations of historical leachate seepage, were found to be dry at the ground surface. The gravity seep collection pipe was observed to be discharging approximately 10 gpm to the GWIT system.

Periodic inspections should continue to monitor the condition of the landfill cover system at the north and south landfills. Inspections should assess the condition of vegetation, perimeter slopes, riprap, toe drain outlets, Quad Pond area, East Ditch and south landfill storm water drainage

ditches, triangle area structures and pipes, south landfill leachate collection system, and gravity seep collection system in two areas along the bluff of historical leachate seepage. Any evidence of erosion, tension cracks or cover soil instability, or damage from burrowing animals should be noted for future repair. In addition, if depressed areas on the landfill cover system that may pond water develop, they should be noted for future repair. The condition of the toe drain outlets should be observed and any necessary follow-up action taken. The bluff area should be inspected at the two locations of historical leachate seepage to verify the gravity seep collection pipe is preventing the seeps from occurring. The bluff area should be checked for the presence of any additional areas of seepage that were not addressed under the landfill cap project. The SOW (Section 1.2.7) states that the surficial seeps should be eliminated as a result of the installation of the new cap and leachate collection system. However, if leachate seeps persist after the completion of the remedial action, under the O & M phase of the project, necessary steps will be taken to characterize the nature and extent of the seepage and remedial actions that will curtail the seepage. During the August 10, 2010 Five Year Inspection, additional areas of leachate seepage were noted (see Attachment 4).

#### **IV.C.2 Landfill Gas Collection System**

The SOW requires the quality of gas emitted from the gas venting system to be monitored semi-annually for a period of two years. If deemed necessary to protect human health and the environment, an active gas collection and treatment system will be designed and implemented. The data has been collected and results indicate no impact to off-site receptors.

#### **IV.C.3 Interim Ground Water Monitoring**

Following completion of construction of the landfill cap, the project entered the interim groundwater monitoring period with groundwater monitoring performed on a quarterly basis to assess the effectiveness of the landfill cap. The Illinois EPA and its contractor, Camp Dresser & McKee (CDM), have performed quality assurance oversight during the quarterly ground water sampling events. The interim groundwater monitoring program was approved by Illinois EPA on November 9, 2001, and some new groundwater monitoring wells and piezometers were installed in November and December 2001. The interim groundwater monitoring was initiated in December 2001. Groundwater monitoring frequency was altered from monthly to quarterly in 2009.

#### **IV.C.4 Institutional Controls**

Institutional controls (ICs) are non-engineered instruments, such as administrative and legal controls that help to minimize the potential for exposure to contamination and that protect the integrity of the remedy. ICs are required to assure the long-term protectiveness for any areas which do not allow for unlimited use or unrestricted exposure. ICs are also required to maintain the integrity of the remedy. The 1999 ROD for the LFOU required that ICs would be implemented “to include prohibition of on-site groundwater use, on-site building construction, and on-site drilling except for the purpose of remedial design, sampling, monitoring, and remedial action.”



<b>Table 1 - Institutional Controls Summary Table</b>		
<b>Media, Engineered Controls &amp; Areas that Do Not Support UU/UE Based on Current Conditions</b>	<b>IC Objective</b>	<b>IC Instrument Implemented (Planned)</b>
Landfill ("Burdened Property"), including groundwater	-Prohibit the installation of groundwater wells for the purpose of producing potable water, and;  -Prohibit the use, improvement or maintenance for any type of residential or commercial purposes, and;	Two separate Environmental Land Use Controls; one on the original landfill parcel; the other on the property transferred to Flint Hills
Groundwater	Prohibit the installation of groundwater wells for any purposes except for groundwater monitoring or remediation activities.	Two separate Environmental Land Use Controls; one on the original landfill parcel; the other on the property transferred to Flint Hills

An IC Study was prepared by BP Amoco. The IC Study contained a recent title commitment showing proprietary controls, and current deed restrictions (See Appendix F). Illinois EPA will evaluate BP's IC Study to determine whether it needs to be supplemented, and whether the institutional controls which are shown for the site will be protective in the long run.

## **V. Progress Since the Last Review**

This is the second five-year review for this Site. The last five-year review was completed in September 29, 2005. The protectiveness statement from the previous five-year review stated the following:

*The constructed remedy at the Landfill Operable Unit is expected to be protective of human health and the environment upon attainment of groundwater cleanup goals. In the interim, exposure pathways that could result in unacceptable risks are being controlled through institutional controls (believed to be implemented), site access restrictions, and maintenance of the landfill cap. The institutional controls at the LFOU will be further evaluated for their current effectiveness, and their ability to protect against exposure to contaminants over time.*

*A site-wide protectiveness determination will be made: after necessary steps are taken to characterize the nature and extent of recent leachate seepage, after remedial alternatives are implemented to curtail seepage and address any resultant contaminated soil, and after the GWOU remedy has been implemented. Based on groundwater flow direction, wells near the Site are not expected to be affected by the Site.*

The last five-year review indentified a number of critical issues and provided a number of recommendations. The following table lists those recommendations along with the responses.

**Table 2. Summary of Recommendations of Last Five-year Review and Follow-up Actions**

<b>Issue</b>	<b>Recommendations and Follow-up Actions</b>	<b>Status</b>	<b>Comments</b>
1. Site Documents and Records	Collect and maintain referenced records on-site in such a manner as they are readily available for inspection by Illinois EPA at all reasonable times.	On-going	BP maintains copies of the HASP, O&M Manual, and other relevant field documents in a site trailer. Because there is not a permanent structure or staff onsite, all project records are maintained in their consultant's office located in Warrenville, IL. BP is in the process of creating CDs of important Site documents to keep at a local library and make available at the Site trailer.
2. Access roads	Repair ruts on access roads and maintain the roads.	Completed on as needed basis	Repairs were performed during construction of the conveyance line; road conditions are monitored during Site activities and semiannual inspections. Minor repairs are completed as warranted.
3. Grass Cover	Mow the landfill cap at a minimum on an annual basis.	Completed Annually	The landfill cap is mowed annually, during the fall.
4. Landfill surface	Continued observation of deer tracks, small areas of slightly sparse vegetation on the southeast and southwest corners of the north landfill and along the northeast corner of the north landfill, take corrective actions as necessary.	Semi-annual inspections and as needed	The landfill surface is inspected during semiannual inspections; ruts along the northeastern portion of the landfill created by deer were repaired in June 2009. Issues identified during the April 2010 inspection are being monitored, and any repairs will be completed by September 2010.
5. Landfill surface	Collect settlement monument survey data as part of the Site O & M.	Completed per O&M Plan; in May 2009, BP agreed to continue surveying every 3 years for continued compliance	The O&M Plan required this only for the first 2 years after construction provided settling was not observed; no settling was observed so surveying was discontinued between 2003 and 2008. Following a May 2009 meeting with IEPA, settlement surveying was completed.
6. Leachate Seepage Collection System	Address changes made to the leachate seepage collection system, if necessary, and	Completed	Changes to the system were made during construction of the conveyance line, and a

	implement an approved contingency plan to prevent surcharge conditions from occurring in the future.		contingency plan has been included in the Draft O&M Plan Addendum submitted in April 2010.
7. Leachate Seepage	Take necessary steps to characterize the nature and extent of the seepage and remedial alternatives that will curtail the seepage.	Initial Sampling and Analysis Plan submitted 2005	Grab samples were collected from two seeps along the North Landfill in March 2009. Additional sampling will be conducted as part of the 2010 Remedial Investigation.
8. Perimeter Ditches	Monitor area of erosion on the East Ditch; take corrective actions as necessary.	Semi-annual inspections and as needed	See item 4
9. Groundwater monitoring	Provide locks for PZ-13, 14, 15, 16, 17, secure cap on PZ-17.	Completed	All wells have locking caps and are secured by locks. Problems with wells are identified during each sampling event and subsequently addressed.
10. Groundwater Monitoring	Continue until sufficient data has been collected to determine the effectiveness of the landfill operable unit remedy.	Quarterly sampling was continued through 2008; currently performing semiannual sampling	IEPA provided verbal approval in August 2008 for modification from quarterly to semiannual sampling schedule; semiannual sampling began with the March 2009 sampling event, and sampling is now scheduled for April and October of each year.

## **VI. Five-Year Review Process**

### **VI.A. Administrative Components**

The Illinois EPA is the lead agency for this five-year review. The support agency is the U.S.EPA. The U.S. EPA and BP Amoco were notified in mid 2010 of the five-year review.

Camp, Dresser & McKee, as contractor to the Illinois EPA, performed most of the tasks required for the review. The review consisted of the following components:

- Community Notification and Involvement
- Document Review
- Data Review
- Site Inspection
- Five-Year Review Report Development and Review

### **VI. B. Community Notification and Involvement**

A notice was published in the Joliet Herald News on July 23, 2010 and the Channahon Weekly on July 29, 2010, stating that a five-year review was being conducted. The notice invited the public to submit comments to the Illinois EPA by August 31, 2010. Comments from the

community were received by the Illinois EPA or U.S. EPA and responses provided (see Appendix E). The results of the review and this Five-Year Review Report will be placed in the Site repository located at the Three Rivers Public Library, 25207 West Channon Drive, Channahon, Illinois, or the Illinois EPA Headquarters, 1021 North Grand Avenue East, Springfield, Illinois. A copy of the published notices can be found as Attachment 2.

#### **VI.C. Document Review**

The list of the documents that were reviewed for this five-year review can be found in Attachment 3.

#### **VI.D. Data Review**

The primary objective of the LFOU remedy is to control the landfills as a source of continuing groundwater contamination by reducing the infiltration of rainfall and reducing the quantity of leachate migrating from the Site. A quarterly groundwater monitoring program has been in place since implementation of the remedy and provides the data utilized in this analysis. The overall objective of the five-year review process is to evaluate if the remedy, as implemented, is or will be protective of human health and the environment. The guidance document for the five-year review process (U.S. Environmental Protection Agency, Office of Emergency and Remedial Response, June 2001, Comprehensive Five-Year Review Guidance, OSWER No. 9355.7-03B-P, EPA 540-R-01-007) indicates that this evaluation is based on the risk range and hazard index. This review focuses on using Site monitoring data to determine if the remedy has had an impact on either groundwater levels or groundwater quality. Ideally, if the remedy is meeting its stated intention in the ROD, recharge through the waste materials should decrease since a multilayer RCRA cap was installed. Likewise, under ideal circumstances, a decrease in concentrations of Site contaminants at downgradient monitoring wells should be observed at some point after remedy implementation. It should be noted that the remedy did not include a liner or other means of limiting recharge from leachate that may have been present in the waste, or areas where the waste may be within the saturated zone. Natural systems also may require significant time to equilibrate with changes in conditions, such as a change in the recharge rate. Variability in rainfall will also impact the response of the system to the remedy implementation. During the five year period since the year 2005, precipitation has been variable.

The groundwater system at the Site consists of an upper unit comprised of saturated, unconsolidated material and shallow weathered bedrock (HSU1), underlain by deeper fractured bedrock (HSU2). Several wells at the Site monitor a transition zone between the major hydrostratigraphic units. The landfill is located on an upland area and waste may be in contact with the upper aquifer unit in some locations. Hydrographs of water level elevation over time, indicate that seasonal factors are important at the Site and must be considered in evaluating the effectiveness of the remedy. The hydrographs were examined to qualitatively assess trends. The contaminants of concern at the Site include organic acids, volatile organic compounds and metals. Metals are detected at many of the wells, especially iron and manganese, likely due to the highly reducing environment that has developed due to the landfill leachate. VOCs are sporadically detected at the Site, though below action levels. Benzene, chlorobenzene, toluene and xylene have been detected in several samples during the past five years at low levels.

Based on analysis of monitoring data at the Site, it is difficult to definitively state that the remedy is meeting its objective of protection of human health and the environment. Once the GWOU is implemented conditions at the LFOU should significantly improve to meet objectives of protectiveness. Organic acids at concentrations that exceed comparison values are present outside of the landfill. However, this may be due to continued drainage of leachate from the waste, or groundwater levels rising into the waste materials, rather than failure of the capping or leachate collection systems.

#### **VI.E. Site Inspection**

A Site inspection was completed on August 10, 2010. Participants and affiliations were as follows:

Lori Littrell	BP Amoco	BP representative
John Frankenthal	BP Amoco	BP representative
Randy McKay	AECOM	BP's technical consultant
Bob Carson	Illinois EPA	NPL Unit (Unit Manger)
Eric Runkel	Illinois EPA	NPL Unit (Project Manager)
Giang-Van Nguyen	U.S.EPA	Project Manager
Shawn Schipper	CDM	Project Manager

The inspection was conducted according to the checklist provided in Appendix D of the Comprehensive Five-Year Guidance provided by the U.S. EPA.

After the review of the checklist was complete, the attendees performed a walkover of each landfill. The landfills were checked to visually observe that they were operating as designed and to check for previously unseen problems. Pictures were taken by CDM that would aid in the description of the landfill conditions in this report (see Attachment 4).

The landfill covers were inspected for low areas and areas of stressed or different ground cover to determine if landfill settlement had occurred since installation of the landfill cap. There was no evidence of significant settlement observed. However, due to large amounts of vegetation lying on the ground, small changes in elevation or settlement were not detectable. There was no evidence of wet areas or water damage observed on the landfill covers. The covers did show signs of deer activity as evidenced by several deer tracks running across the landfill. Several items identified in the inspection report (listed under Section VIII) warrant further follow-up.

#### **VI.F. Interviews**

From 1999 to 2001, during the design and construction of the remedy, the community surrounding the Site was given opportunity to provide input into development of the remedy and express any concerns or questions about the Site. Since the achievement of the last construction completion at LFOU in 2001, there have been no major problems communicated to the regulatory agencies by the community. The need has not arisen for any community involvement events and the proximity of the Illinois EPA's offices to the Site facilitates the agency's

availability. Therefore, it was determined that no formal interviews with the community were necessary for this five-year review. No formal interviews with the U.S. EPA or BP Amoco were performed for this five-year review.

## **VII. Technical Assessment**

### **VII.A Question A: Is The Remedy Functioning As Intended By The Decision Documents?**

#### Remedial Action Performance

The review of documents, ARARs, risk assumptions, and the results of the Site inspection indicate that the remedy is not functioning as intended by the ROD. There is a continuing problem of leachate seeps from the landfill which were noted in the first five-year review in 2005. concentrations of organic acids in excess of comparison values are present outside of the landfill and additional area of leachate seepage were noted during the August 10, 2010 Five Year Inspection.

#### System Operations/O&M

Based on periodic Site visits and the August 10, 2010 Five Year Review Inspection, the landfill cover system and gas venting system are generally functioning as intended by the ROD and other decision documents. As a result, no significant future modifications are recommended for the landfill cover system or gas venting system at this time. The plans to address the concerns noted regarding the leachate seepage are discussed below .

#### Opportunities for Optimization

Leachate seeps, as noted in the August 10, 2010 Five Year Inspection Report, will be addressed through necessary steps to characterize the nature and extent of seepage and through remedial alternatives to curtail the seepage. BP Amoco changed the leachate seepage collection system with review, approval, or oversight by the Illinois EPA. BP Amoco provided construction reports in several submittals; the most recent is dated June 2010. These are currently under review by the Illinois EPA. This leachate seepage collection issue affects current and future protectiveness of the LFOU remedy and warrants continued follow-up.

#### Implementation of Institutional Controls and Other Measures

The institutional controls that have been recorded in property records include Environmental Land Use Covenants limiting on-site groundwater use, and limitations on the disturbance of the landfills and other activities that might interfere with the implemented remedy. In September 2010, BP Amoco submitted an institutional controls study to Illinois EPA which included a current title commitment for the Site, a summary of proprietary controls such as easements, covenants, and/or reversionary interests currently assigned to the land, and a summary of any local ordinances or property zoning applicable to the Site property. Illinois EPA will evaluate the information provided by BP Amoco to determine whether the existing institutional controls are sufficient for long-term protectiveness for the Site, and if necessary, develop an IC plan to enhance existing IC controls. Based upon the August 10, 2010 Site Inspection, no evidence was observed that suggested that there was any land or resource use which is inconsistent with the remedial action objectives.

The re-use initiative is a consideration for this Site. Future decisions regarding re-use of the Site will consider the requirement for the remedy to remain protective of human health and the environment. However, because the site property is privately owned and is currently subject to land use restrictions, and because a Record of Decision has not been developed or issued for the GWOU, it is likely that re-use of the Site property will not be implemented before the next Five Year Review in 2015. Residential development on this Site is not consistent with current or projected land use patterns.

#### Interim Monitoring

Interim monitoring of the monitoring well network has been performed quarterly since December 2001 under the supervision of Camp, Dresser & McKee, as oversight contractor for the Illinois EPA. Based on analysis of monitoring data at the Site, it is difficult to definitively state that the remedy is meeting its objective of protection of human health and the environment because a final groundwater remedy still needs to be finalized. Concentrations of organic acids in excess of comparison values are present outside of the landfill. However, this may be due to continued drainage of leachate from the waste or from groundwater rising into the waste materials, and not due to failure of the capping or leachate collection systems.

Two operable units have been identified at this Site--one for the landfills and the other for the contaminated groundwater. The assessment included in this document focuses on the landfill operable unit. A remedy for the GWOU will be established by another Record of Decision. Development of a ROD for the GWOU will include investigation of groundwater monitoring data and a determination of the LFOU remedy's effectiveness in preventing Site waste materials from leaching contaminants into groundwater.

#### **VII.B Question B: Are The Exposure Assumptions, Toxicity Data, Cleanup Levels, And Remedial Action Objectives (RAOs) Used At The Time Of Remedy Selection Still Valid?**

There have been no changes in the physical conditions of the Site that would affect the protectiveness of the remedy.

#### Changes in Standards and To-Be-Considereds (TBCs)

There have been no changes in ARARs for groundwater cited in the ROD and no new standards or TBCs affecting the protectiveness of the remedy.

#### Changes in Exposure Pathways, Toxicity, and Other Contaminant Characteristics

The exposure assumptions used to develop the Human Health Risk Assessment included both current exposures and potential future exposures for ingestion of contaminated groundwater, dermal contact with contaminated groundwater, inhalation of volatile contaminants during domestic use of groundwater, incidental ingestion of contaminated surface water in seeps and the Des Plaines River, and incidental ingestion of sediment in seeps and the Des Plaines River. There have been no changes in the toxicity factors for the contaminants of concern that could affect the protectiveness of the remedy. These assumptions are considered to be conservative and reasonable in evaluating risk, and no changes are warranted.

Physical controls (such as site access control, fencing, security locks and site security) have already been implemented and have eliminated exposure pathways at the Site. Environmental Land Use Covenants have already been implemented, although their current and future effectiveness needs to be evaluated. These measures signify that the LFOU remedy remains protective of human health and the environment in the short term, although additional measure to ensure long-term protectiveness and stewardship will need to be implemented.

#### Changes in Risk Assessment Methods

There has been no change to the standardized risk assessment methodology that could affect the protectiveness of the remedy.

#### Expected Progress Towards Meeting RAOs

No formal estimates for the time requirement to achieve for remedy objectives have been made. For this Site it is assumed that remedy objectives will be obtained in not more than 30 years from the date of the completion of remedy construction.

#### **VII.C Question C: Has any other information come to light that could call into question the protectiveness of the remedy?**

As indicated in the ROD, the Baseline Risk Assessment concludes that for protection of ecological resources, control of: (1) Site runoff, (2) leachate discharges to the surface (via leachate seeps), (3) sediment transport to the Des Plaines River and its associated backwaters, and (4) groundwater discharges to surface water bodies are most critical. Potential sediment-related impacts to the Des Plaines River will be assessed in a forthcoming supplemental Ecological Risk Assessment.

Based on analysis of monitoring data at the Site, it is difficult to definitively state that the remedy is meeting its objective of protection of human health and the environment because a final groundwater remedy has not yet been implemented. Organic acids at concentrations that exceed comparison values are present outside of the landfill. However, this may be due to continued drainage of leachate from the waste, or groundwater levels rising into the waste materials, rather than failure of the capping or leachate collection systems. The LFOU remedy is expected to be protective when issues listed in Section VIII are satisfactorily addressed on an expedited timeframe. A Record of Decision establishing a remedy for the GWOU will be issued before the next Five Year Review in 2015. In the interim, exposure pathways are being controlled through Site security, access controls and through the notice provided by the Environmental Land Use Covenants, although institutional controls will be the subject of follow-up activities.



## VIII. Issues

**Table 3. Issues**

Issues	Affects Current Protectiveness (Y/N)	Affects Future Protectiveness (Y/N)
Need to develop Institutional Controls Plan and Evaluate the IC Study submitted by BP Amoco	N	Y

### I. Site Documents & Records.

A.) Based on CDM discussions with Retec and BP Amoco during the August 10, 2010 inspection, O&M documents are not kept on-site. The O&M documents that were previously maintained at the BP Amoco manufacturing facility (now owned by Flint Hills Resources), are currently available through Conestoga-Rovers and Associates, technical consultant for BP Amoco.

B.) The Site Specific Health and Safety Plan and Contingency/Emergency Response Plan is reportedly kept on site, and reviewed at the time of the August 10, 2010 inspection.

C.) The O & M and safety training records were not available.

D.) Permits and Service Agreements including the air discharge permit and leachate discharge service agreement were not available on-site. Based on CDM discussions with BP Amoco, the landfill gas vents were included under the air discharge permit for the former BP Amoco manufacturing facility; the permit will need to be changed. The leachate collection system currently discharges into a sewer connection to the City of Joliet Publicly Owned Treatment Works. BP Amoco has obtained all necessary permits and approvals from the Illinois EPA and others as appropriate.

E.) Leachate extraction records for the leachate collection system were reviewed.

F.) Discharge compliance records for the air permit and leachate discharge service agreement were not available. This information was previously available at the former BP Amoco manufacturing facility, now owned by Flint Hills Resources.

G.) Illinois EPA will review the institutional control study submitted by BP Amoco in September 2010 to determine if additional information is needed, and to determine if the existing ICs which are in place at the Site, the Environmental Land Use Covenants, will need to be enhanced.

In summary, the Illinois EPA has requested BP Amoco, within a 30 day timeframe or longer if agreed to by Illinois EPA, to collect and maintain the above referenced records on-site in such a manner as they are readily available for inspection by Illinois EPA at all reasonable times. The Supplemental Consent Decree requires BP Amoco to provide information relating to activities at the Site, et alia, upon request by the State.

## 2. General Site Conditions.

A.) During the August 10, 2010 inspection, the access roads along the perimeter of the north and south landfills and in the lower portion of the Site to the east of the bluff area were found to be in good condition. BP Amoco and AECOM had indicated the roads were repaired recently.

## 3. Landfill Surface.

A.) During the August 10, 2010 inspection, the north and south landfill areas were inspected for low areas and areas of stressed or different groundcover to determine if landfill settlement had occurred since installation of the landfill cap. There was no evidence of significant settlement observed.

B.) There are several deer tracks running across the landfill and evidence of deer inhabitation. These tracks are areas of reduced vegetation and slight depressions that warrant continued observation. In addition to the deer tracks, small areas of slightly sparse vegetation were observed on the southeast and southwest corners of the north landfill and along the northeast corner of the north landfill. These areas warrant continued observation.

C.) Based on CDM discussions with BP Amoco, landfill settlement monitoring has not been conducted. BP Amoco will be directed to collect settlement monument survey data as part of the Site's O & M.

## 4. Leachate Seepage.

A.) During 2010, BP Amoco made some changes to the leachate seepage collection system with the review, approval, and oversight by the Illinois EPA.

B.) During the August 10, 2010 Site inspection, several seeps, wet areas, and areas of ponding to the east of the landfill below the bluff were observed. The most significant area of concern was the drainage ditch along the lower access road which had staining on the rip rap and discoloration of the water in the ditch. This discoloration appeared to originate at seeps located along the slope of the bluff which borders the north landfill. Several other areas to the south showed evidence of staining on the soil and discolored seepage water along the bluff which borders the landfills. The Illinois EPA will direct BP Amoco to investigate these areas and provide appropriate remedial alternatives to curtail the seepage. This finding affects current and future protectiveness of the remedy, and warrants continued follow-up.

## 5. Perimeter ditches.

No erosion was observed for the North landfill. Areas warrant continued observation, and will be addressed by BP Amoco as part of the required continuous O&M activity for the LFOU remedy.

## 6. Groundwater Monitoring.

A.) Quarterly groundwater monitoring, at a minimum, has been conducted since the completion of the landfill cap in Summer 2005. At this time it is difficult to determine whether the LFOU remedy has had a significant impact on groundwater contamination. Water levels and contaminant concentrations have varied significantly and contaminant concentrations have exceeded the proposed remediation goals in monitoring wells downgradient of the landfill. Quarterly groundwater monitoring should be conducted until sufficient data has been collected to determine the effectiveness of the remedy. The groundwater operable unit will be evaluated under separate documents and will be included in the next Five Year Review, due in 2015. A remedy for the GWOU will be established by another Record of Decision, to be developed and issued before the next Five Year Review in 2015. Development of a ROD for the GWOU will include investigation of groundwater monitoring data and a determination of the LFOU remedy's effectiveness in preventing leaching of contaminants from site waste materials into groundwater.

## 7. Ecological Risk Assessment.

The Illinois EPA is working with BP Amoco to determine if the landfills have impacted the sediment in a backwater slough area of the Des Plaines River. Potential sediment-related impacts to the Des Plaines River from the Site will be assessed in a forthcoming supplemental Ecological Risk Assessment.

## 8. Groundwater Operable Unit Record of Decision.

The GWOU will be evaluated under separate documents and a remedy selected and implemented before the next Five Year Review due in 2015. A remedy for the GWOU will be established by another Record of Decision. Development of a ROD for the GWOU will include investigation of groundwater monitoring data and a determination of the LFOU remedy's effectiveness in preventing site waste materials from leaching contaminants into groundwater.

## IX. Recommendations and Follow-up Actions

**Table 4. Recommendations and Follow-up Actions**

Issue	Recommendations and Follow-up Actions	Party Responsible	Oversight Agency	Milestone Date	Affects Protectiveness (Y/N)	
					Current	Future
Need to develop Institutional Controls Plan and Evaluate the IC Study submitted by E.P Amoco	-Develop IC Plan	BP Amoco	IEPA and U.S. EPA	December 2010	N	Y
	-Evaluate the IC Study submitted by BP Amoco to determine whether existing implemented institutional controls need to be enhanced.		IEPA	December 2010	N	Y

## X. Protectiveness Statement

The remedy at the Landfill Operable Unit is expected to be protective of human health and the environment in the long term upon attainment of groundwater cleanup goals. In the short term, exposure pathways that could result in unacceptable risks are being controlled through institutional controls, site access restrictions, and O&M activities. However, the leachate seeps need to be expeditiously addressed so that the remedy will be protective for an intermediate period.

The institutional controls that are in place include restrictive easements and covenants, and Environmental Land Use Covenants limiting on-site groundwater use, and limitations on the disturbance of the landfills and other activities that might interfere with the implemented remedy. The continued presence of Flint Hills personnel at the operating chemical production facility and BP Amoco personnel at the landfill area, and physical access constraints provides security for the site property.

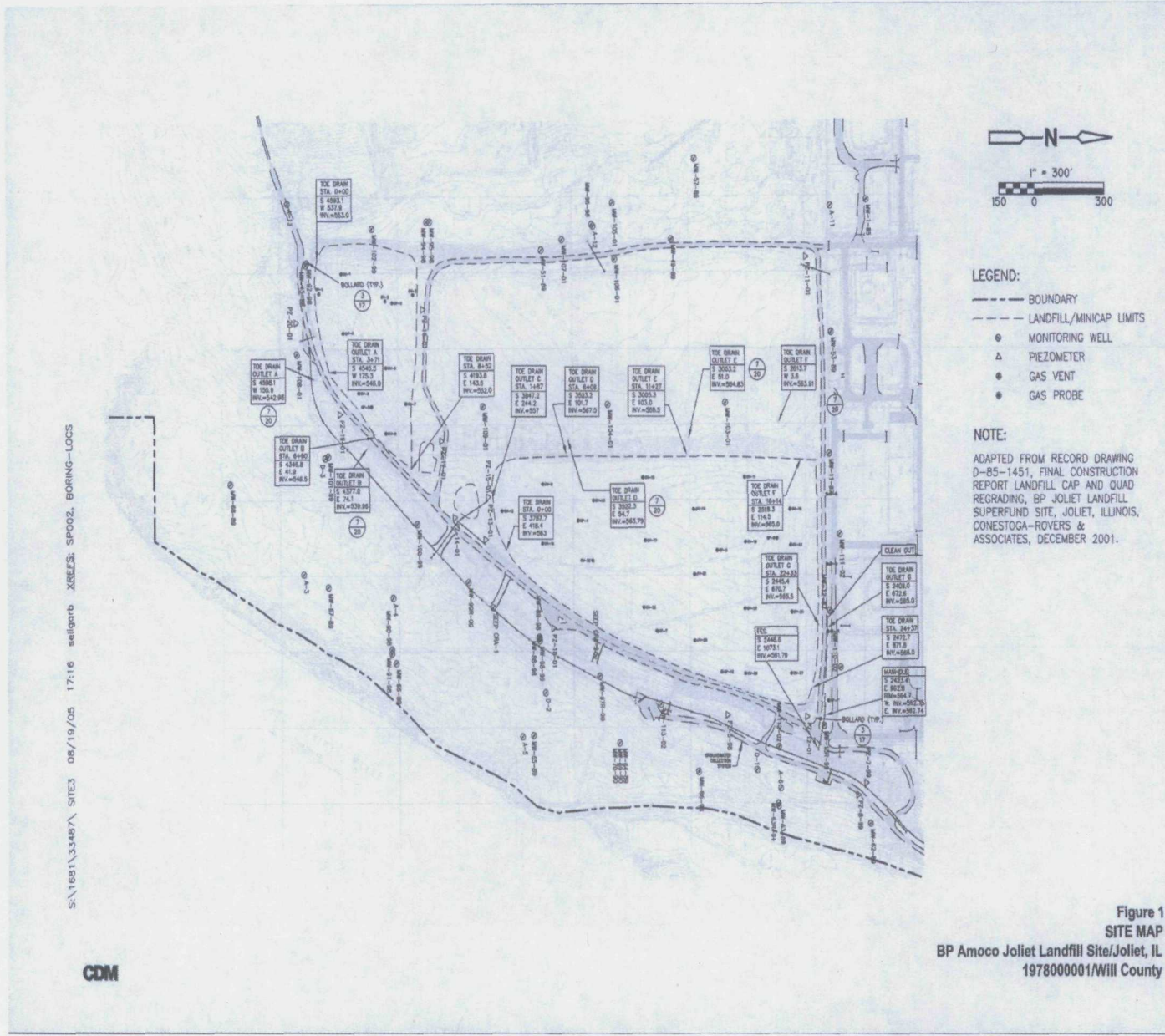
A site-wide protectiveness determination will be made after the GWOU remedy has been implemented.

## XI. Next Review

The next five-year review for the Site is required by September 2015, five years from the approval signature date of this report.

## ATTACHMENTS

# Attachment 1





# Attachment 2

AUG-17-2010 09:17 FROM:

TO: 2177857725 P.001/002

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### IEPA Begins Review of BP Amoco Joliet Landfill Superfund Site

The Illinois Environmental Protection Agency (IEPA) is accepting information and comments for its five-year review of the BP Amoco Joliet Landfill Superfund Site until August 21, 2010. The site is located in Joliet County approximately 1.5 miles southeast of the intersection of Interstate 55 and U.S. Route 8. The Superfund law requires regular review of all sites where cleanup expenditures in excess of \$1 million have been made every five years, are done to ensure that the cleanup remedy continues to protect human health and the environment. Ideally, the cleanup included:

- The construction of a landfill cap conforming to applicable requirements;
- Installation of a gas venting system;
- Installation of a leachate collection system down gradient of the southern landfill and a leachate collection system down gradient of the southern portion of the north landfill (leachate is defined as any liquid that comes into contact with waste in the landfill);
- Installation of surface water management features to minimize erosion and infiltration;
- Groundwater monitoring;
- Maintenance of the landfill cap and monitoring and
- Final status of the landfill.

Please share this information regarding the five-year review with anyone interested in this site.

Site related documents can be reviewed at the IEPA Headquarters, 1821 North Grand Avenue, Springfield, Illinois.

To provide comments or to request information, contact:

Dr. Richard IEPA Project Coordinator POB 18278 Springfield, IL 62704-0278 217.785.7725 Eric.Austin@illstate.gov	Dr. Howard IEPA Community Relations Coordinator POB 18278 Springfield, IL 62704-0278 217.785.7854 Bill.Hansen@illstate.gov
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### CALENDAR

FROM PAGE 31

attend; pre-registration is not required and everyone is welcome. Bring at least 20 copies of your handbill or resume. Becky Brillon, career adviser at Community Career Center, will present "Federal Job Application Tips and Hints." For information, e-mail: [EmploymentMistery@amip.org](mailto:EmploymentMistery@amip.org).

Plainfield chamber: Ribbon cutting, 11:30 a.m., Sister Family Eye Care, LLC, 24523 W. Lockport St., Suite 101.

### Wednesday

Shorewood chamber: Ribbon cutting, 11:30 a.m., Shorewood Family Medicine, 3344 West Jefferson St., Suite 200 (open house from 9 a.m. to 7:30 p.m.); noon, Farnsworth Group Inc., 1164 W. Jefferson St., Suite 300 (open house from 11 a.m. to 4 p.m.).

### Thursday

H & B Black: Household Budgeting at Charleston's

Bar & Grill, 6-7 p.m., 2101 Callistoga Dr., New Lenox. Joliet chamber: Business After Hours, 5-7 p.m., Splash Station water park, Route 6, Joliet.

### Aug. 6

Joliet chamber: Chamber night, 7 p.m., Jackhammer game, Silver Cross Field. Tickets are \$5 each (half of the regular price). Tickets must be purchased and picked up in person at the chamber office, 63 N. Chicago St., Joliet.

Shorewood chamber: Chamber Network Night, 5-7 p.m., entertainment tent, Crossroads Festival, Four Seasons Park, 25520 W. Sell Road. One free admission per chamber member; \$5 guests. Entertainment by Steel Drum Guy and Pirates Over 40.

### Aug. 6, 7, 8

Shorewood chamber: Crossroads Festival, Four Seasons Park, 25520 W. Sell Road. Live music, parade, carnival, fireworks (9 p.m., Saturday), food, entertainment, 5K race: [www.shorewoodchamber.com](http://www.shorewoodchamber.com).

## Hazardous site now a solar-power plant

By Sandra Guy  
[sguy@heraldnews.com](mailto:sguy@heraldnews.com)

CHICAGO — As Bealon celebrated completion of the nation's largest urban solar-power plant, the next-door neighbors in Chicago's West Pullman community celebrated a new life for a former polluted industrial site.

The plant began operating in December with all 32,392 panels tested and in service in March and final site work just completed. "The solar plant has upgraded this community," said Darnese Finney, secretary for the Victory Heights-Maple Park Community Advisory Council, the neighborhood group that worked with politicians and Exelon to see the solar plant to fruition. The former International Harvester property — now the solar plant — had become an eyesore, a health

hazard and a dumping ground for other communities' old tires and other debris.

"There should be some direct benefit to the people in this community, both to our utility bills and in seeing green," said John Chamber, a 36-year resident and co-chair of advisory council. R.C. Hardy Jr., also a 36-year resident, said the neighborhood hopes to see one or two homes outfitted with a rooftop solar panel as part of a pilot program, and intends to work to upgrade other vacant sites.

"We want to get the whole community to go green," Hardy said. He said now neighbors want to see the former paint company industrial site just east of the solar plant and a former food plant site on 122nd St. transformed, too. Comment on this story, [heraldnews.com](http://heraldnews.com).

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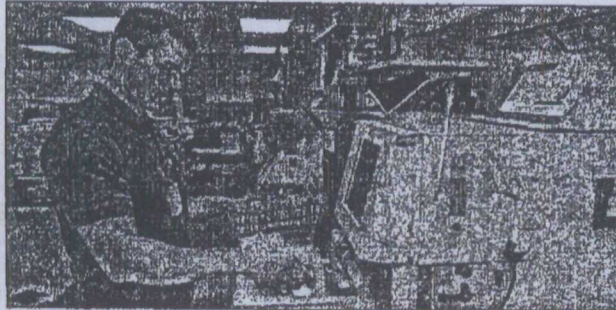
600-309

## Morris Hospital laboratory recognized for excellence

**MORRIS** — The Laboratory at Morris Hospital & Healthcare Centers has been awarded a two-year accreditation by the Accreditation Committee of the College of American Pathologists (CAP) based on results of a recent onsite inspection.

Recognized by the federal government as being equal to or more stringent than the government's own inspection program, the goal of CAP Laboratory Accreditation is to improve patient safety by advancing the quality of pathology and laboratory services through education, standard setting, and ensuring laboratories meet or exceed regulatory requirements.

During the accreditation process, a team of nine inspectors who are practicing laboratory professionals assessed the overall management and operation of the Morris Hospital Laboratory by examining laboratory records and quality control of procedures for the preceding two years. CAP inspectors also examined the



Ryan Cypser, a medical technologist in the Laboratory at Morris Hospital, runs tests to check blood clotting factors prior to patients' surgeries. The Laboratory at Morris Hospital was recently awarded accreditation by the College of American Pathologists.

entire staff's qualifications, the laboratory's equipment, facilities, safety program and record, as well as the overall management of each section of the laboratory, including chemistry, serology, hematology, cytology, microbiology, immunology, coagulation,

histology, urinalysis, and the blood bank.

"In the Laboratory, we have to be meticulous in performing our jobs in order to provide dependable answers to physicians," says Beatriz Solini, M.D., chief pathologist at Morris Hospital & Health-

care Centers. "Being CAP accredited is like a gold seal of approval that indicates our Laboratory has achieved the highest standards of excellence and is committed to positively impacting patient care. The inspectors were highly complimentary of our Laboratory

operations."

Morris Hospital's Laboratory performs well over 850,000 tests each year for hospital patients, as well as independent physician offices and nursing homes. The Hospital recently received a 5-Star Patient Perception Award for overall quality of care in the laboratory, as well as two 4-Star Medical Staff Perception Awards for excellence in pathology and laboratory services from Professional Research Consultants.

As a CAP accredited laboratory, Morris Hospital is part of an exclusive group of more than 7,000 laboratories worldwide that have voluntarily met the highest standards of excellence.

The College of American Pathologists is a medical society serving nearly 17,000 physician members and the laboratory community throughout the world. It is the world's largest association composed exclusively of pathologists and is widely considered the leader in laboratory quality assurance.

## ★ Judge

Continued from page 1  
in attendance for their consid-

eration and open discussion. The videos were created courtesy of the Loyola School of

Law which donated the use of their mock courtroom and video equipment.

Judges who teach at the Education Conference are evaluated by those judges who attend the education session for two categories: 1) engaging and interesting; and 2) being well prepared. Those evaluations

are tabulated and recorded in a database and the results are provided to the presenters along with comments by the judges in attendance to be used to improve future education sessions. The Illinois Supreme Court Administrative Office recently notified the Education Conference faculty members of

the results of their evaluations, and Judge Peterson and his colleagues received very favorable ratings for their presentations averaging over 4.6 out of a 1 to 5 scoring range. Judge Peterson received a rating of 4.63 out of 5 for being interesting and engaging and 4.7 for being well prepared.

### IEPA Begins Review of BP Amoco Joliet Landfill Superfund Site

The Illinois Environmental Protection Agency (IEPA) is accepting information and comments for its five-year review of the BP Amoco Joliet Landfill Superfund Site until August 31, 2010. The site is located in Will County approximately 1.5 miles southeast of the intersection of Interstate 55 and U.S. Route 6. The Superfund law requires regular review of all sites where cleanup construction is complete. These reviews, usually every five years, are done to ensure that the cleanup remedy continues to protect human health and the environment. Briefly, the cleanup included:

- The construction of a landfill cap conforming to applicable requirements;
- Installation of a gas venting system;
- Installation of a leachate collection system down gradient of the southern landfill and a leachate collection system down gradient of the southern portion of the north landfill (leachate is defined as any liquid that comes into contact with waste in the landfill);
- Installation of surface water management features to minimize seepage and infiltration;
- Groundwater monitoring;
- Maintained physical access restrictions; and
- Real estate deed restrictions.

Please place this information regarding the five-year review with anyone interested in this site.

Site related documents can be reviewed at the IEPA Headquarters, 1621 North Grand Avenue East, Springfield, Illinois.

To provide comments or to request information, contact:

Eric Ruckel IEPA Project Coordinator POB 19276 Springfield, IL 62794-9276 217.782.6761 Eric.Ruckel@illinois.gov	Bill Hamel IEPA Community Relations Coordinator POB 19276 Springfield, IL 62794-9276 217.783.3904 Bill.Hamel@illinois.gov
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## ★ Agreement

Continued from page 5

of a crisis. The agreement is believed to be the first of its kind nationally.

This is a proactive way to network the 12 institutions of SMHEC to provide support to one another in the event of any crisis," said Michael J. Vinciguerra, Ph.D., president of the University of St. Francis. "This is a comprehensive agreement that goes well beyond backup support for security to include food distribution, data support, counseling and much more."

As part of the pact, an institution could request facilities, equipment or personnel in a variety of disciplines, including police, human resources and crisis communications.

"While we know of a number of colleges and universities that have mutual aid agreements between their campus public safety department and the local police agency, and several individual campuses with agreements with the local fire department or EMS, we believe this is the first mutual aid agreement amongst a group of both public and private higher education institutions," said John H. Watson, executive director for higher education practices at Arthur J. Gallagher Risk Management Services, who assisted in the agreement.

The South Metropolitan Higher Education Consortium members are: DeVry University, Governors State University, Illinois Institute of Tech-

nology, Joliet Junior College, Kaneoche Community College, Lewis University, Monmouth Valley Community College, Northwestern College, Prairie State College, Saint Xavier University, South Suburban College, and University of St. Francis. The consortium was formed in 1992.

The University of St. Francis in Joliet serves 3,600 students nationwide, offering 38 undergraduate programs, four degree completion programs and 12 graduate programs, along with a doctorate in nursing practice. Programs are offered in arts and science, business, education, nursing and health care and social work. For information, call (800) 735-7500 or visit [www.stfrancis.edu](http://www.stfrancis.edu).

Channahon Weekly July 29, 2010



## Attachment 3

### **List of Documents Reviewed**

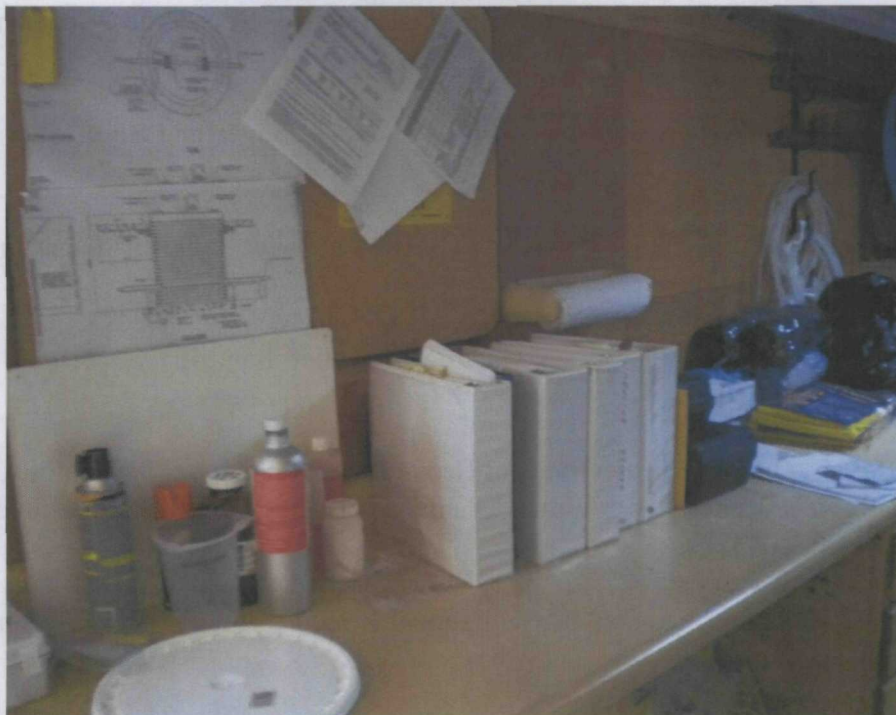
1. Supplemental Consent Decree for Remedial Design and Remedial Action, People of the State of Illinois vs. BP Amoco Chemical Company, U.S. District Court for the Northern District of Illinois, Eastern Division, Civil Action 94-C-0869.
2. Record of Decision for Amoco Chemicals (Joliet Landfill) Superfund Site, Landfill Operable Unit, July 15, 1999.
3. Final (100%) Design Report, BP Amoco Joliet Landfill Superfund Site, Joliet Illinois, CRA, June 1999.
4. Remedial Action Work Plan (RAWP), BP Amoco Joliet Landfill Superfund Site, Joliet Illinois, as amended, CRA July 1999.
5. Statement of Work for BP Amoco Chemicals (Joliet Landfill) Superfund Site, Landfill Operable Unit, May 24, 2000.
6. Five Year Review, Landfill Inspection and Groundwater Impacts, CDM, August 19, 2005.
7. Five Year Review Report, BP Amoco Chemicals (Joliet Landfill) Superfund Site, Illinois EPA, September 29, 2005.
8. Groundwater Monitoring Results, 2<sup>nd</sup> Semiannual Round of Interim Post-Closure Monitoring, AECOM, February 5, 2010.
9. AECOM Monthly progress report on behalf of BP Amoco for the BP Amoco Chemicals (Joliet Landfill), May 2010
10. Correspondence, Illinois EPA to BP Amoco, Request for Institutional Control Study, July 1, 2010.
11. Correspondence, Illinois EPA to U.S.EPA, Notification of Five Year Review Start, July 1, 2010.

## Attachment 4

Photograph #1

Photographed by: Shawn Shiffer

Date: August 10, 2010



Description: Project documents available in on-site trailer.

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Photograph #2

Photographed by: Shawn Shiffer

Date: August 10, 2010



Description: EG308 Collection Vault

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Photograph #3

Photographed by: Shawn Shiffer

Date: August 10, 2010



Description: EG308 Collection vault and transfer system to Joliet POTW. – Facing West.

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Photograph #4

Photographed by: Shawn Shiffer

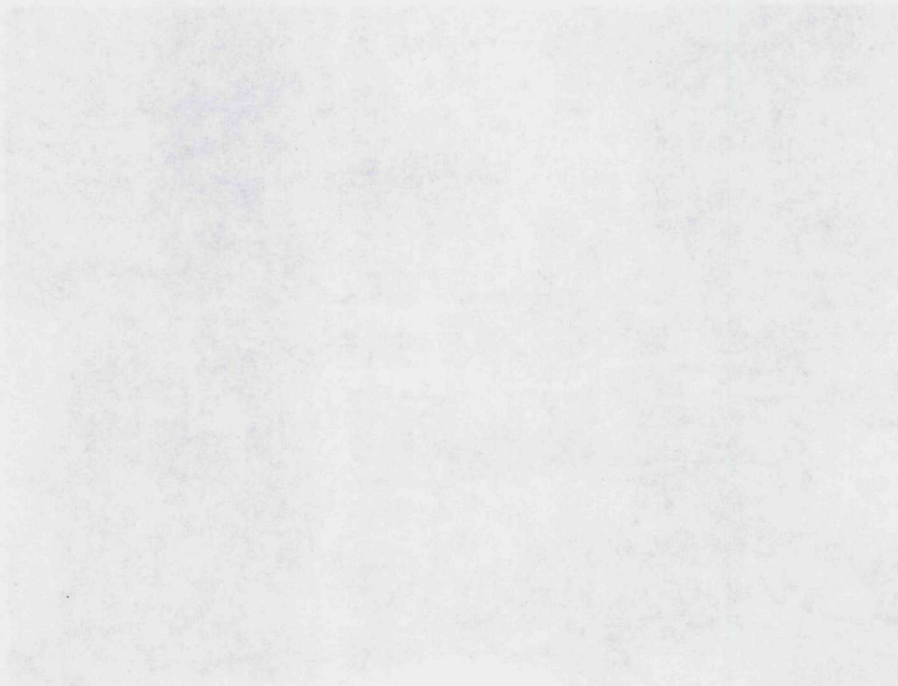
Date: August 10, 2010





Description: Seep 2 – Some staining along drainage ditch- Facing West.

---



Photograph #5

Photographed by: Shawn Shiffer

Date: August 10, 2010



Description: Seep 2 – Staining along drainage ditch – Facing West.

---

Photograph #6

Photographed by: Shawn Shiffer

Date: August 10, 2010



Description: Monitoring well MW-63R-94 – Facing East.

---



Photograph #7

Photographed by: Shawn Shiffer

Date: August 10, 2010



Description: Quad Pond Drainage Outfall – Facing South.

---

Photograph #8

Photographed by: Shawn Shiffer

Date: August 10, 2010



Description: Site Maintenance- Mowing to access to monitoring wells West side of North Landfill – Facing West.

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Photograph #9

Photographed by: Shawn Shiffer

Date: August 10, 2010



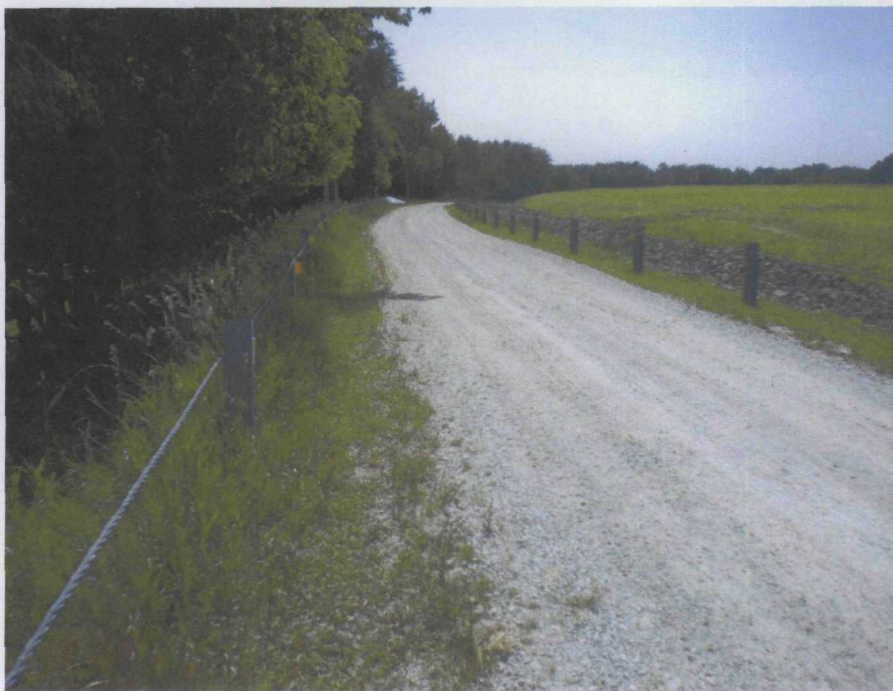
Description: West side of the North Landfill facing South.

---

Photograph #10

Photographed by: Shawn Shiffer

Date: August 10, 2010



Description: East side of Landfills facing South - Current road conditions.

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Photograph #11

Photographed by: Shawn Shiffer

Date: August 10, 2010



Description: EG308 Collection Vault and transfer system to Joliet POTW. – Facing East from North Landfill.

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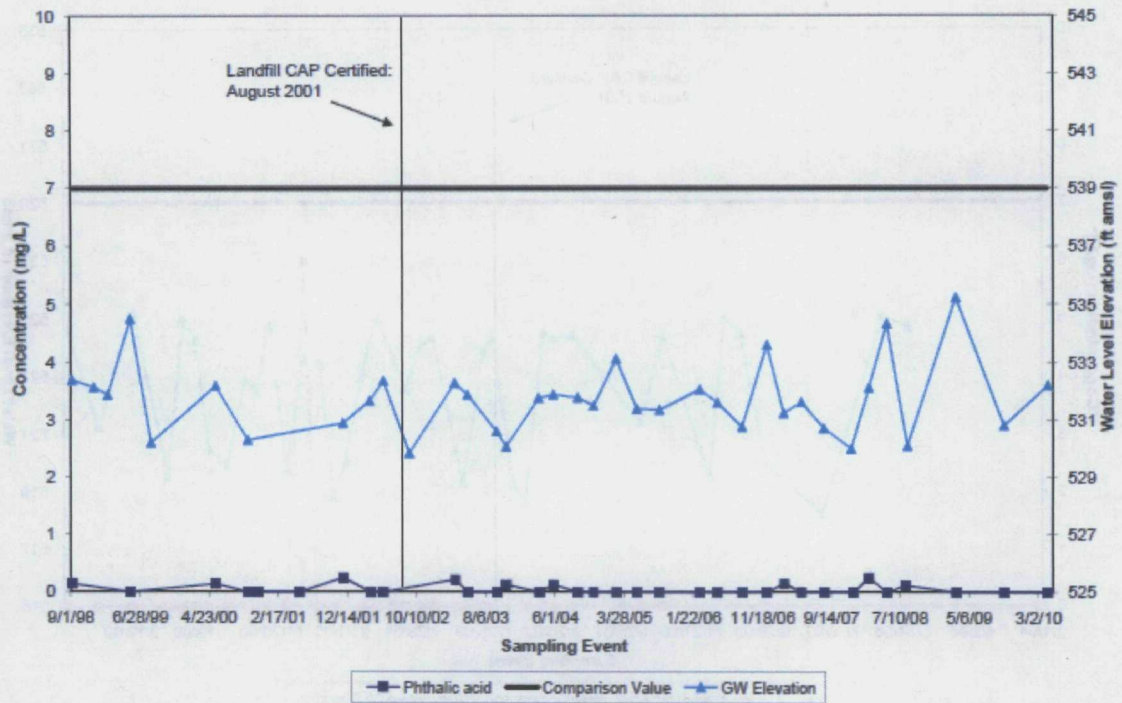


## APPENDICES

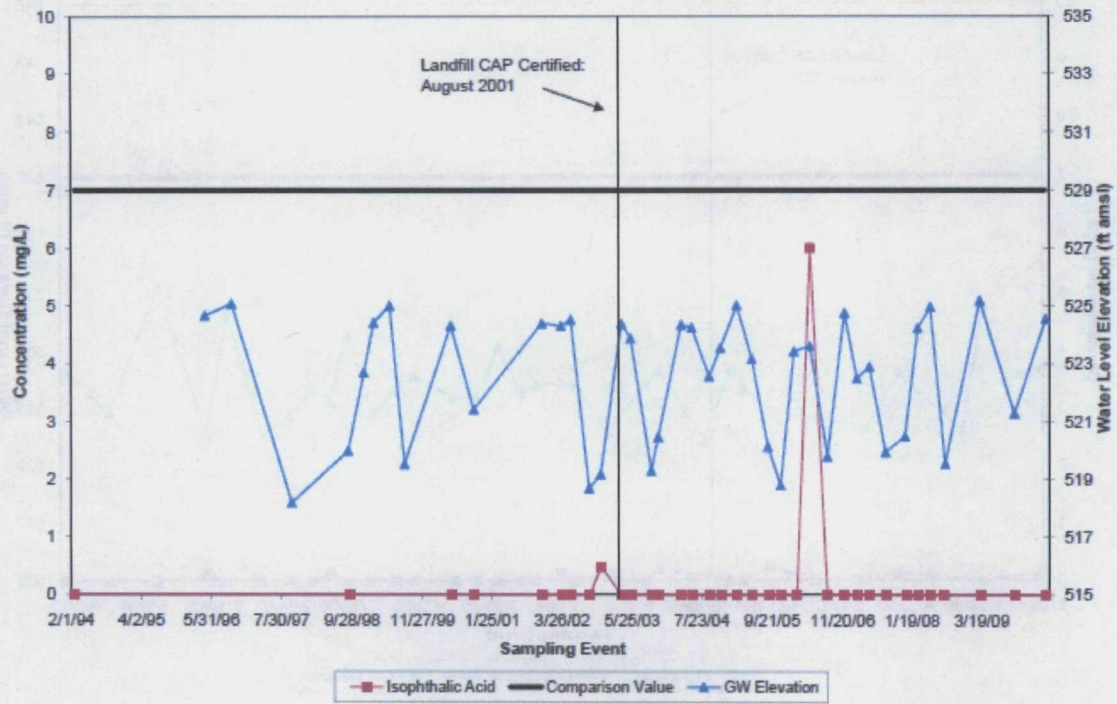
APPENDIX A

PROPERTY BOUNDARY WELLS

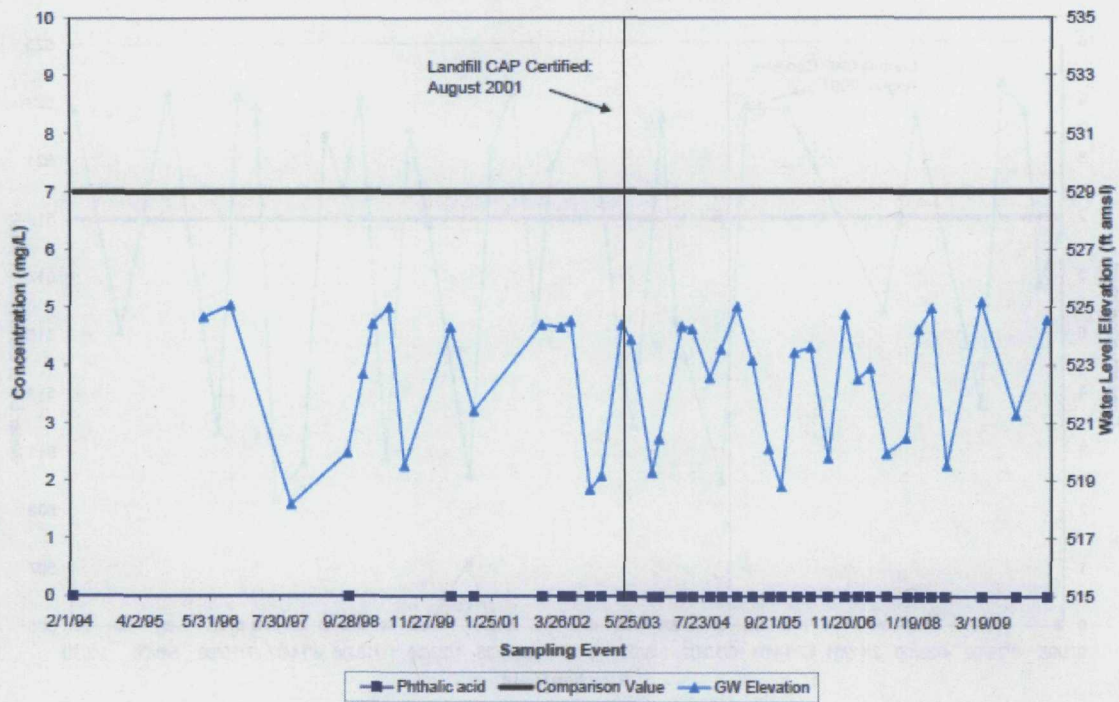
# Phthalic Acid and Groundwater Trends for MW-63R-94 (Property Boundary)



# Isophthalic Acid and Groundwater Trends for MW-65-89 (Property Boundary)

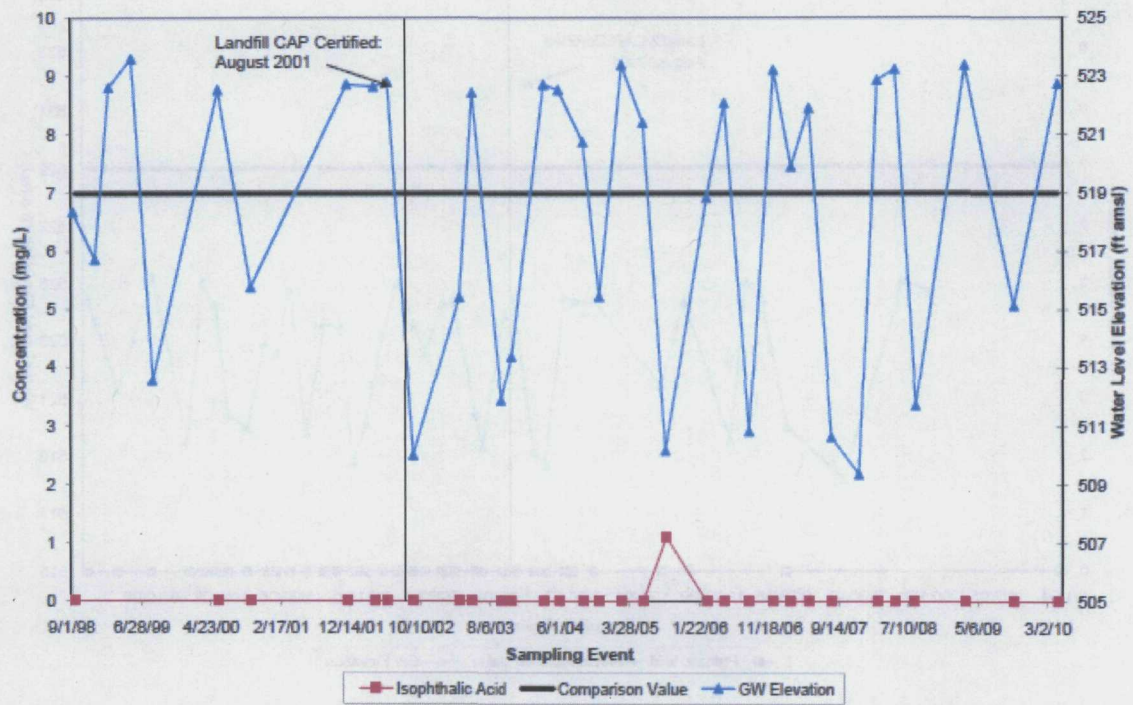


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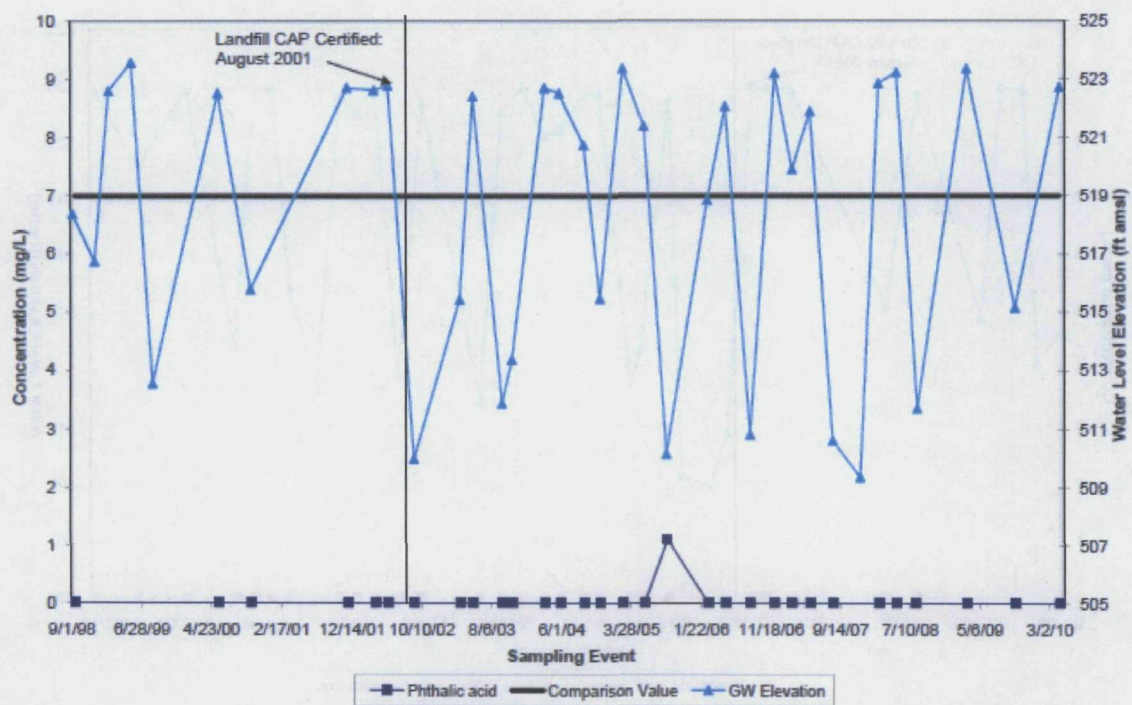




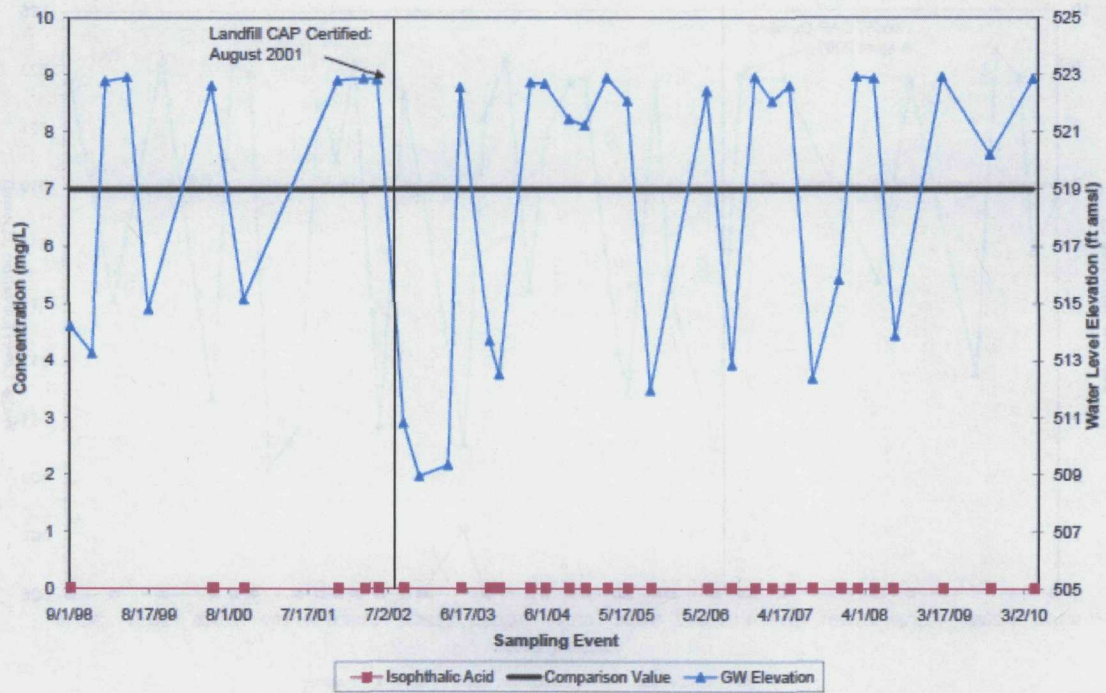
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# Phthalic Acid and Groundwater Trends for MW-66-89 (Property Boundary)

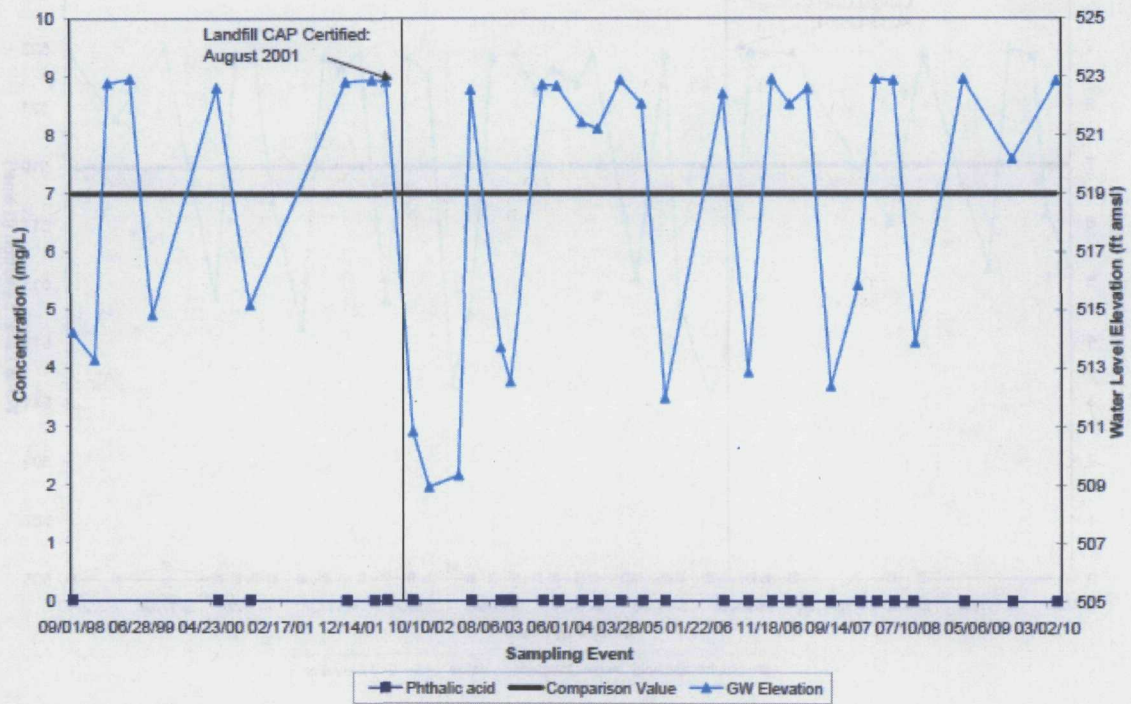


Isophthalic Acid and Groundwater Trends for MW-67-89 (Property Boundary)

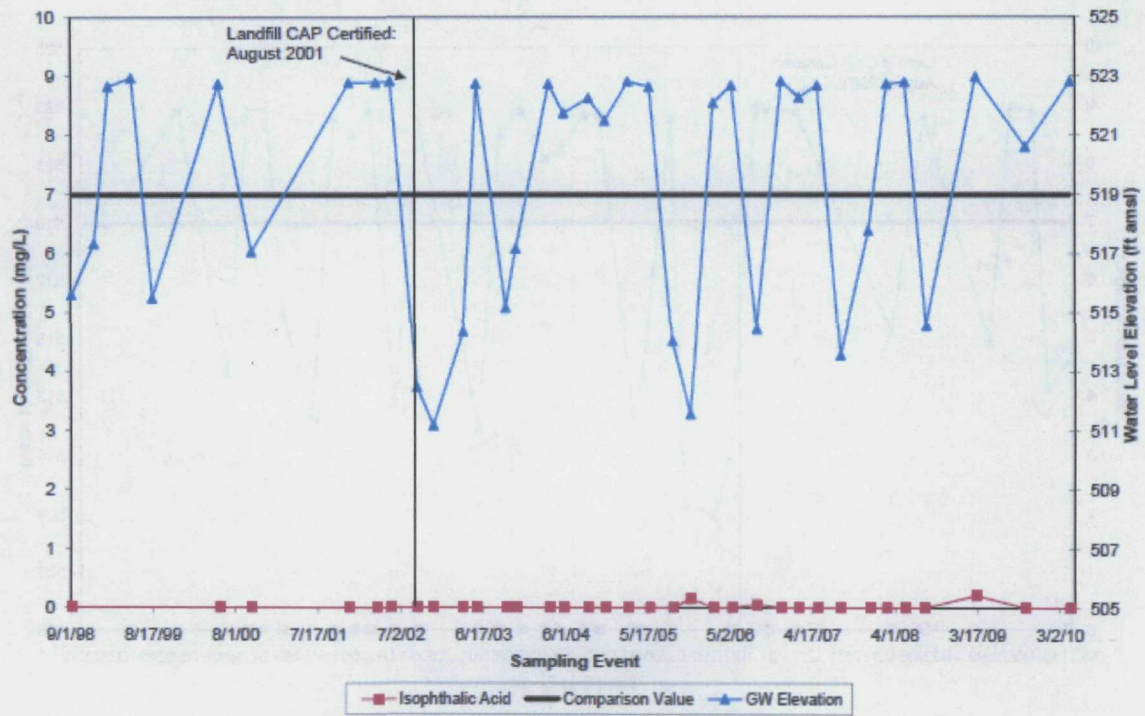




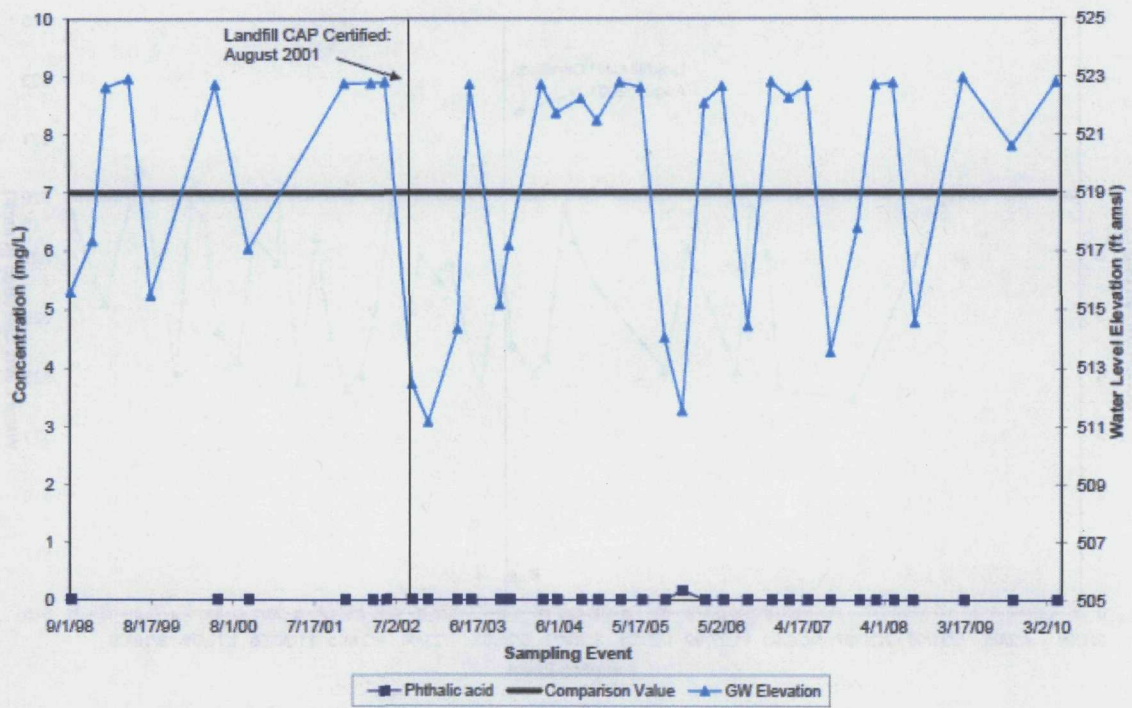
# Phthalic Acid and Groundwater Trends for MW-67-89 (Property Boundary)



# Isophthalic Acid and Groundwater Trends for MW-68-89 (Property Boundary)

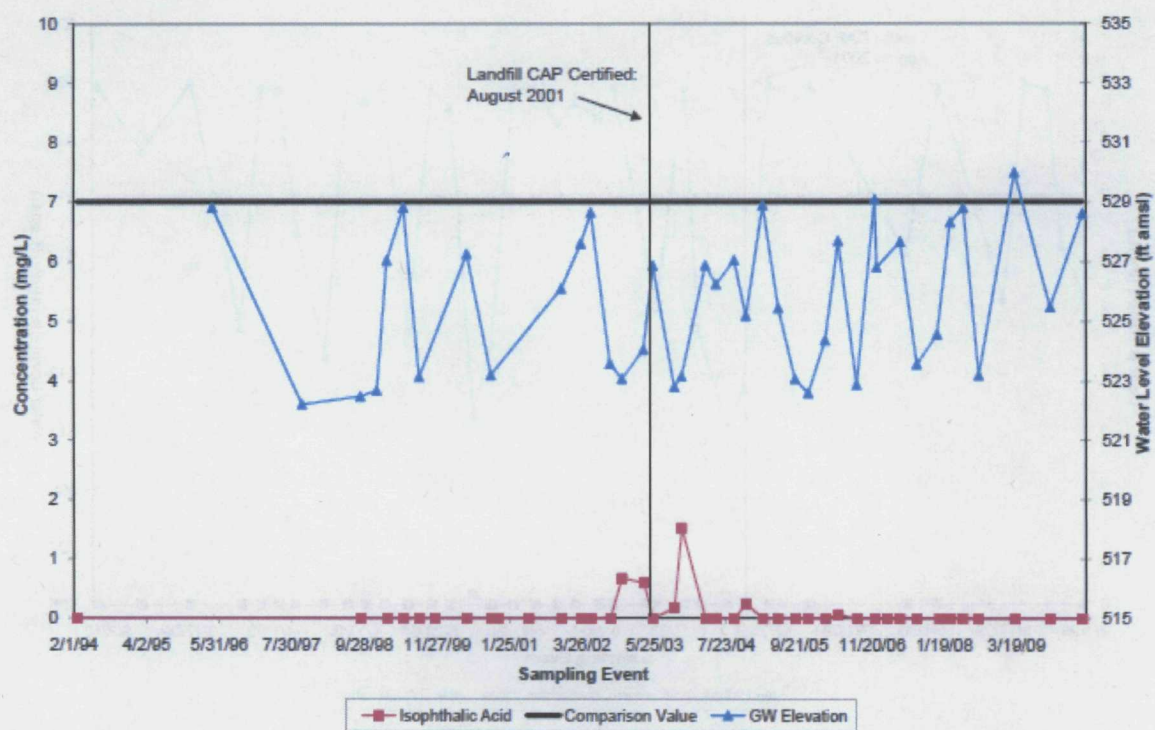


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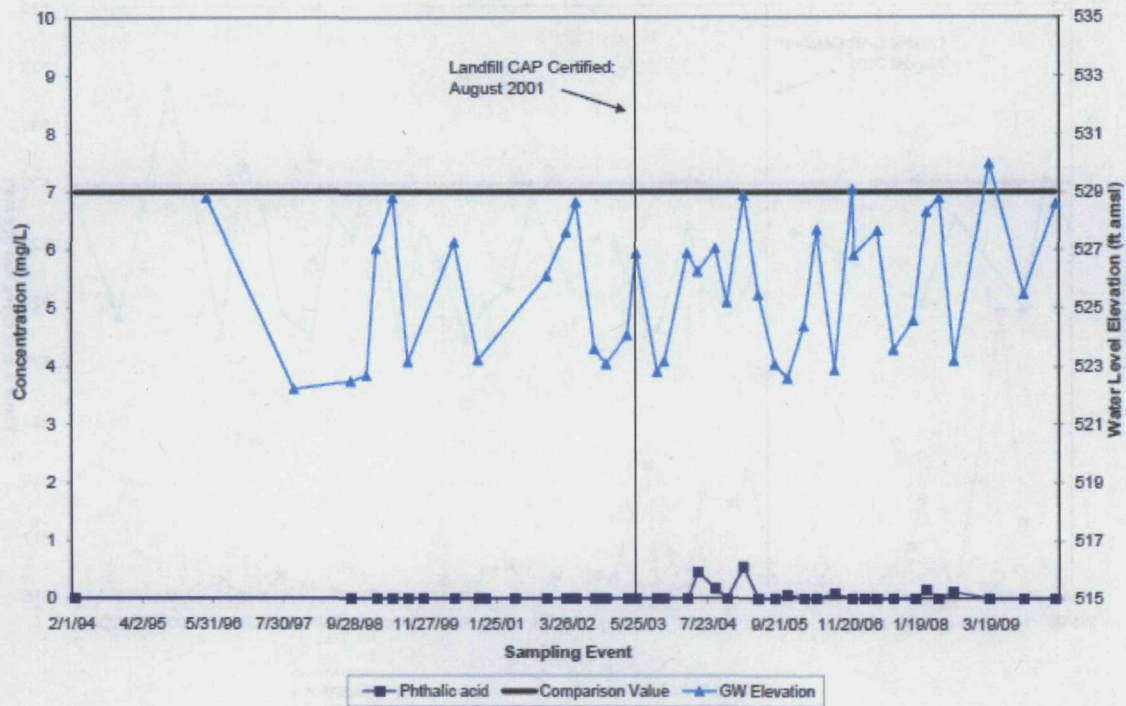




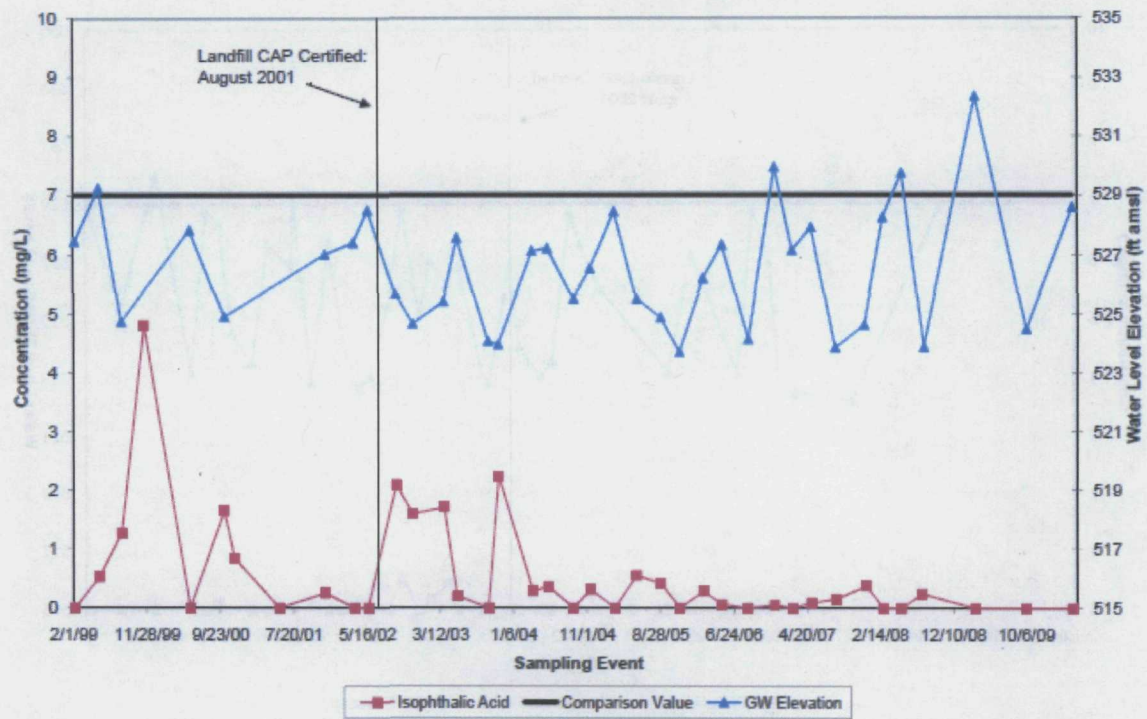
# Isophthalic Acid and Groundwater Trends for MW-69-90 (Property Boundary)



# Phthalic Acid and Groundwater Trends for MW-69-90 (Property Boundary)

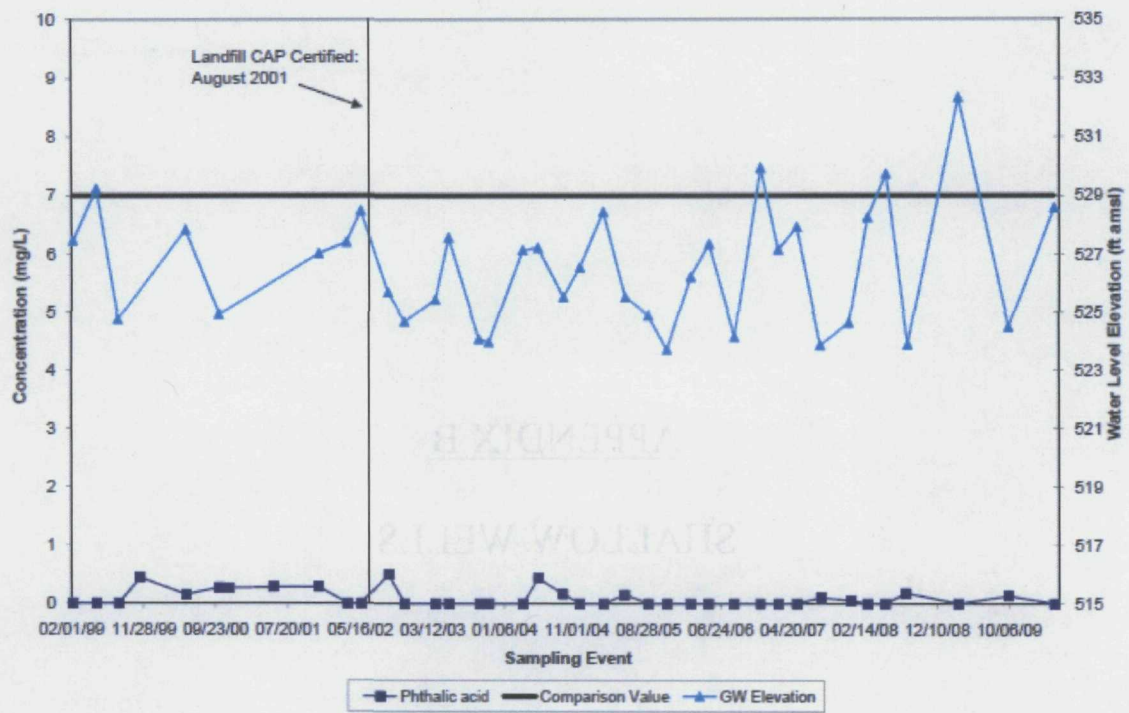


# Isophthalic Acid and Groundwater Trends for MW-86-98 (Property Boundary)





# Phthalic Acid and Groundwater Trends for MW-86-98 (Property Boundary)

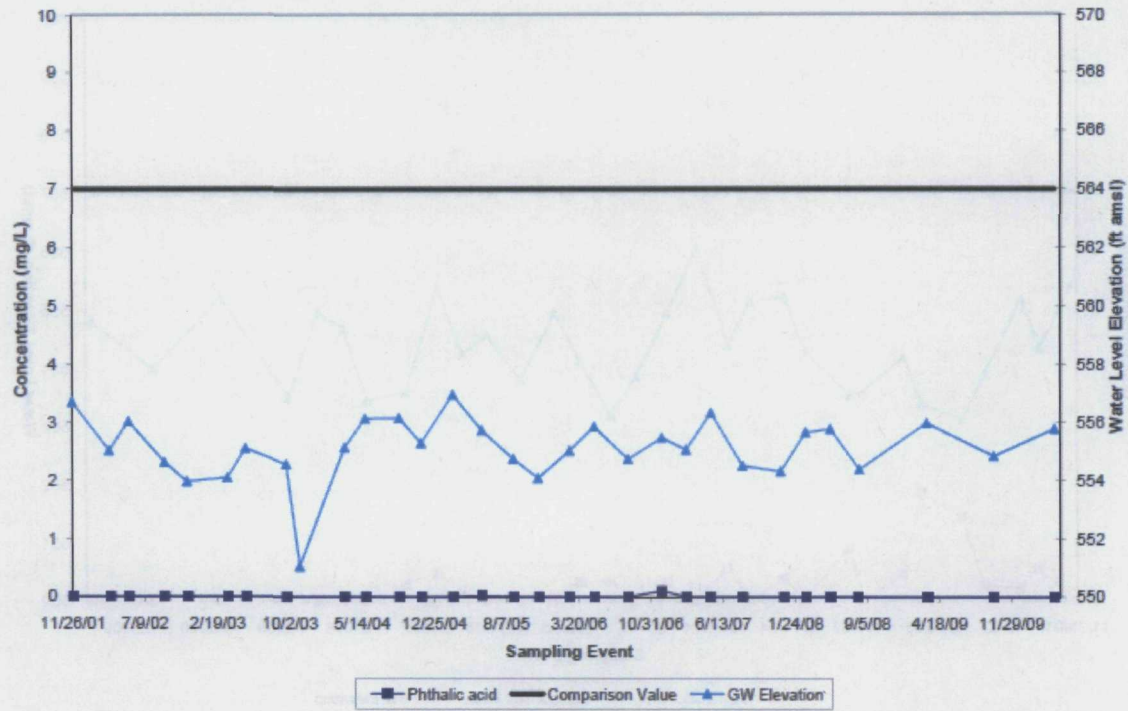


## APPENDIX B

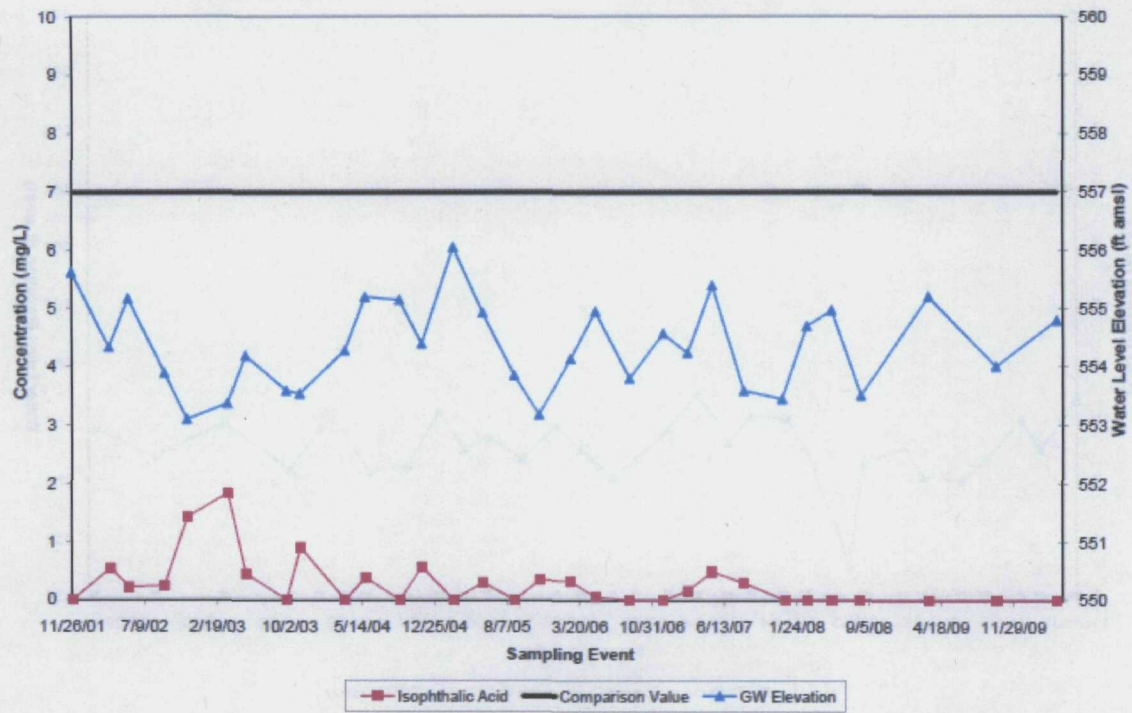
### SHALLOW WELLS



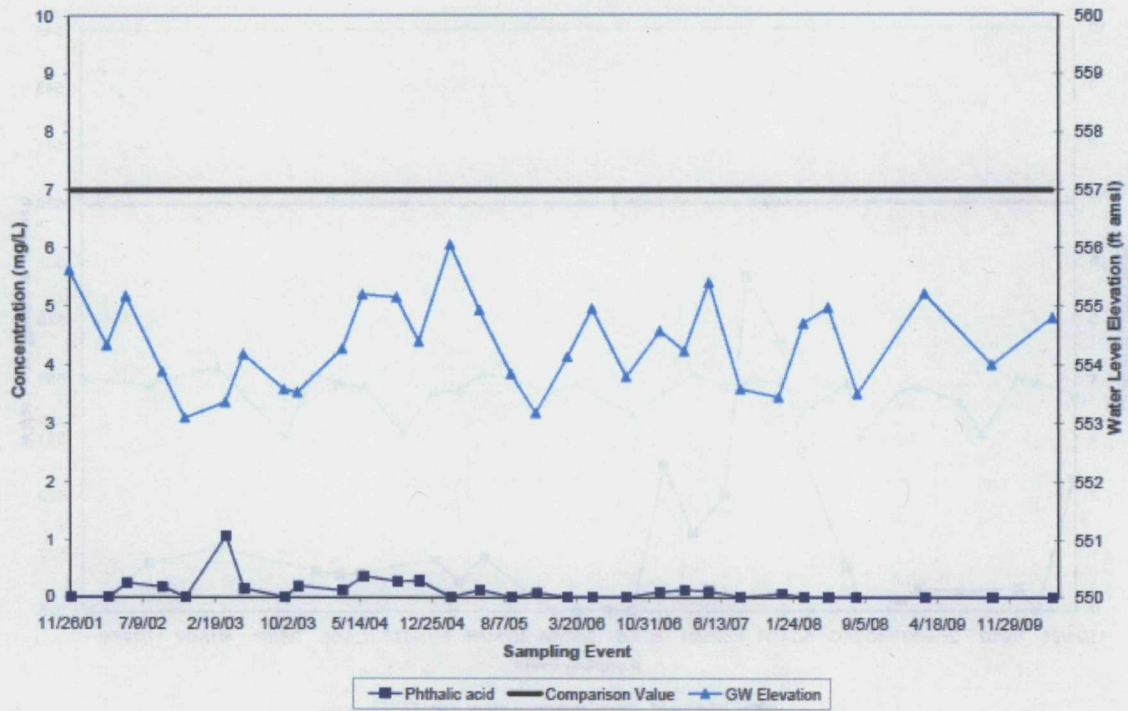
Phthalic Acid and Groundwater Trends for MW-103-01 (Shallow)



Isophthalic Acid and Groundwater Trends for MW-104-01 (Shallow)

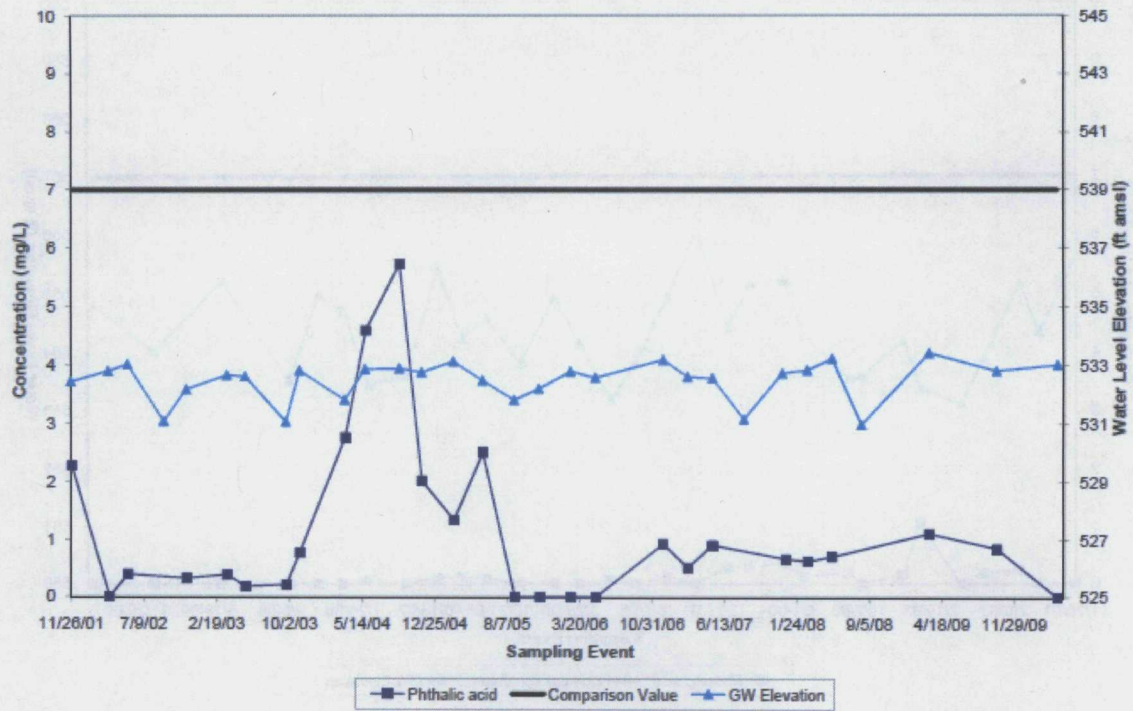


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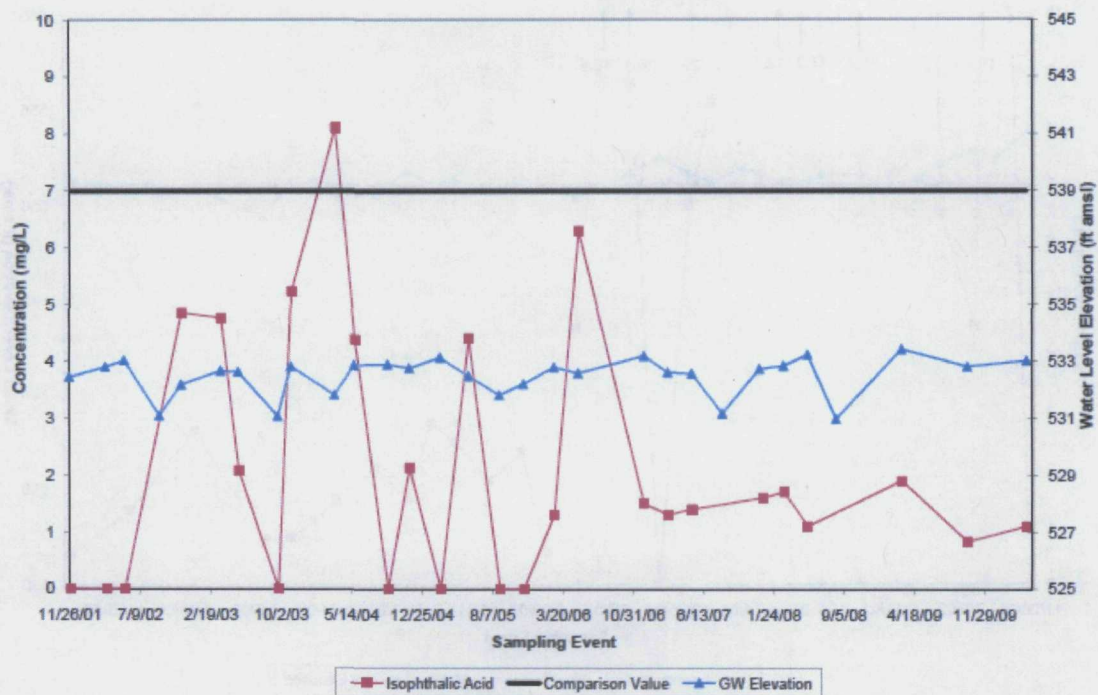


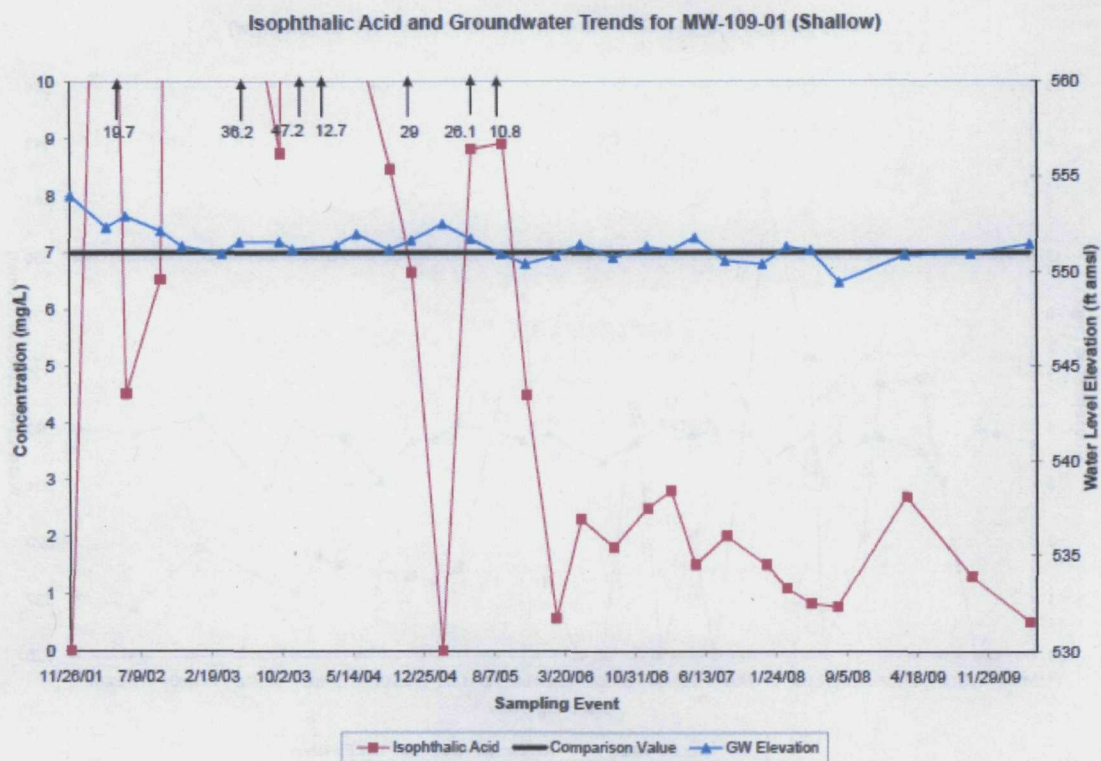


# Phthalic Acid and Groundwater Trends for MW-108-01 (Shallow)



Isophthalic Acid and Groundwater Trends for MW-108-01 (Shallow)



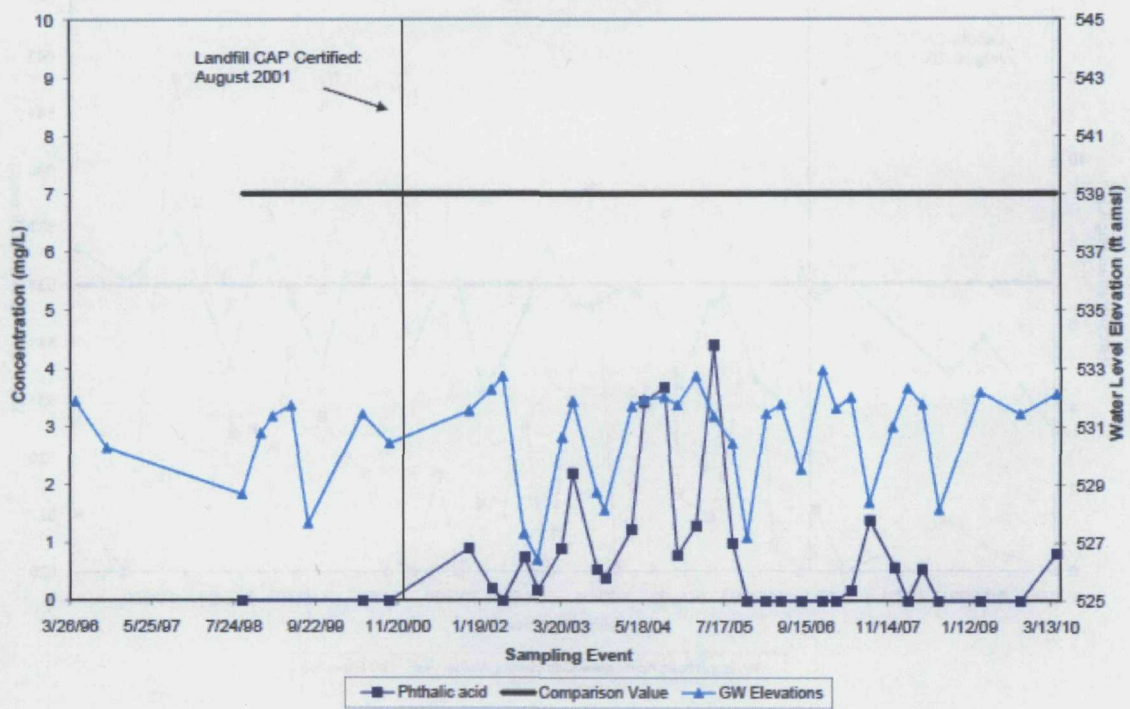


## APPENDIX C

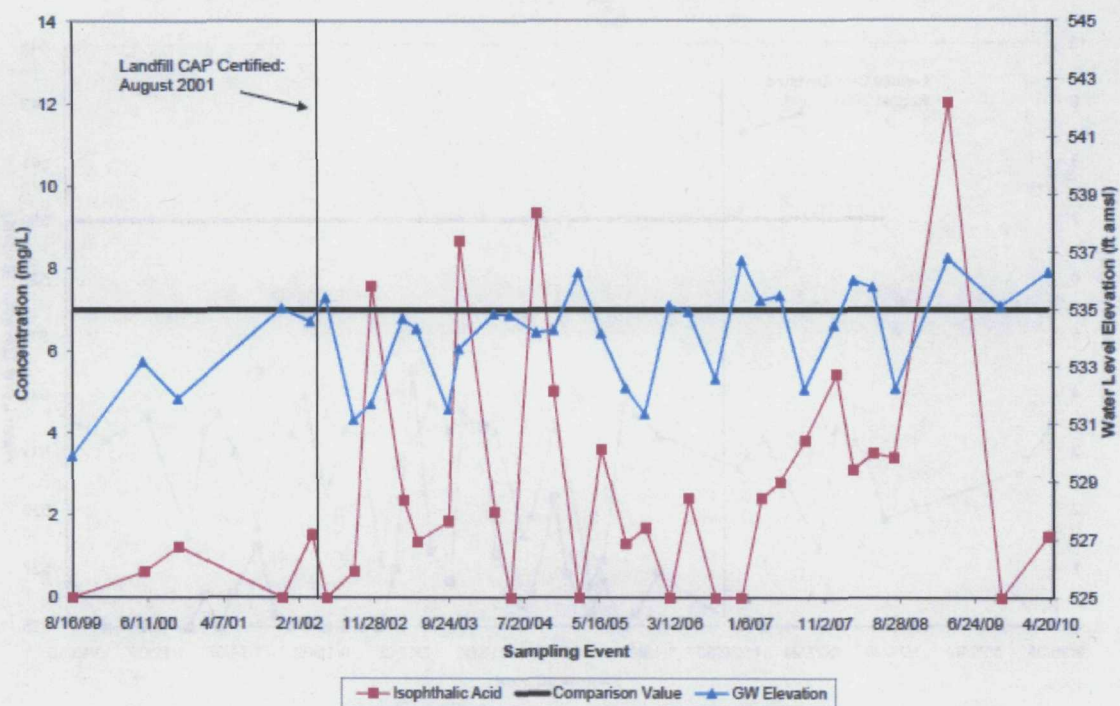
### SENTINEL WELLS



# Phthalic Acid and Groundwater Trends for D-3 (Sentinel)

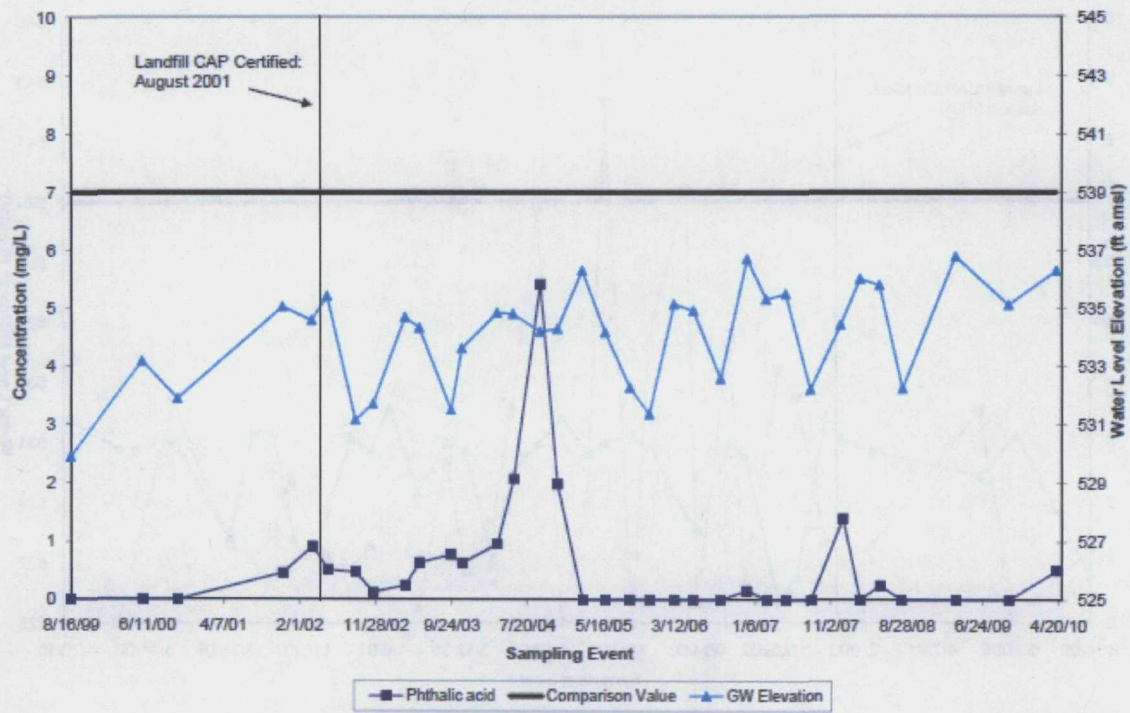


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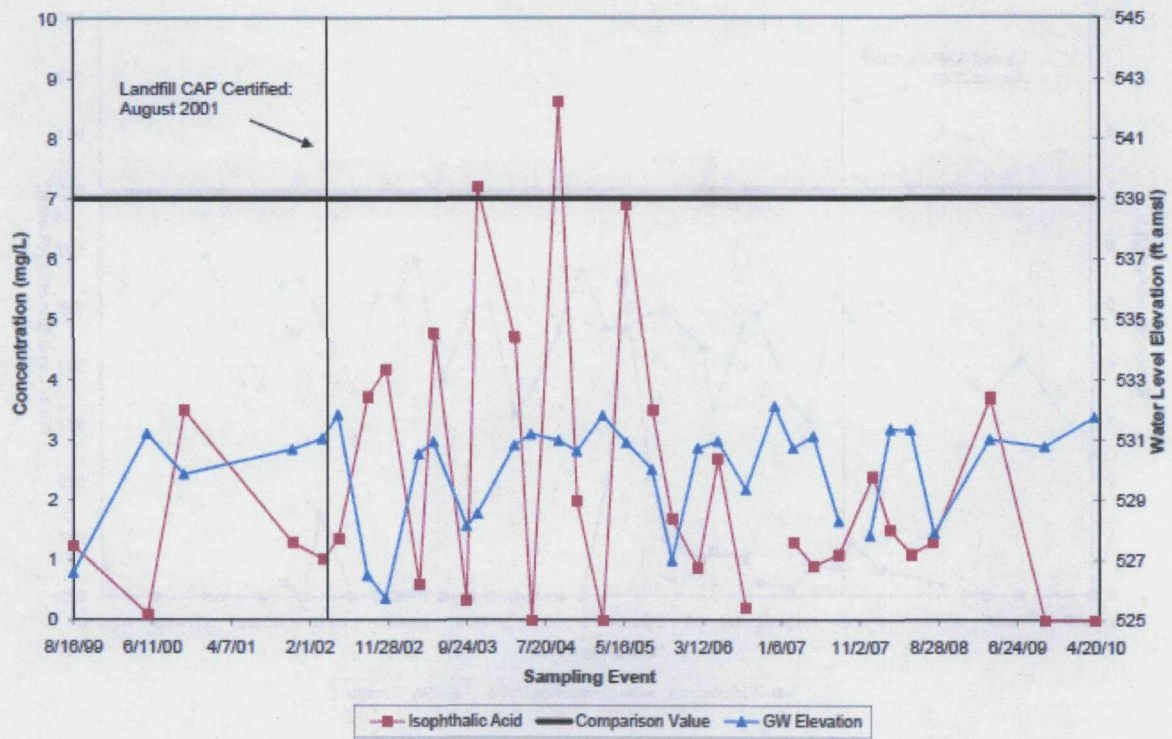




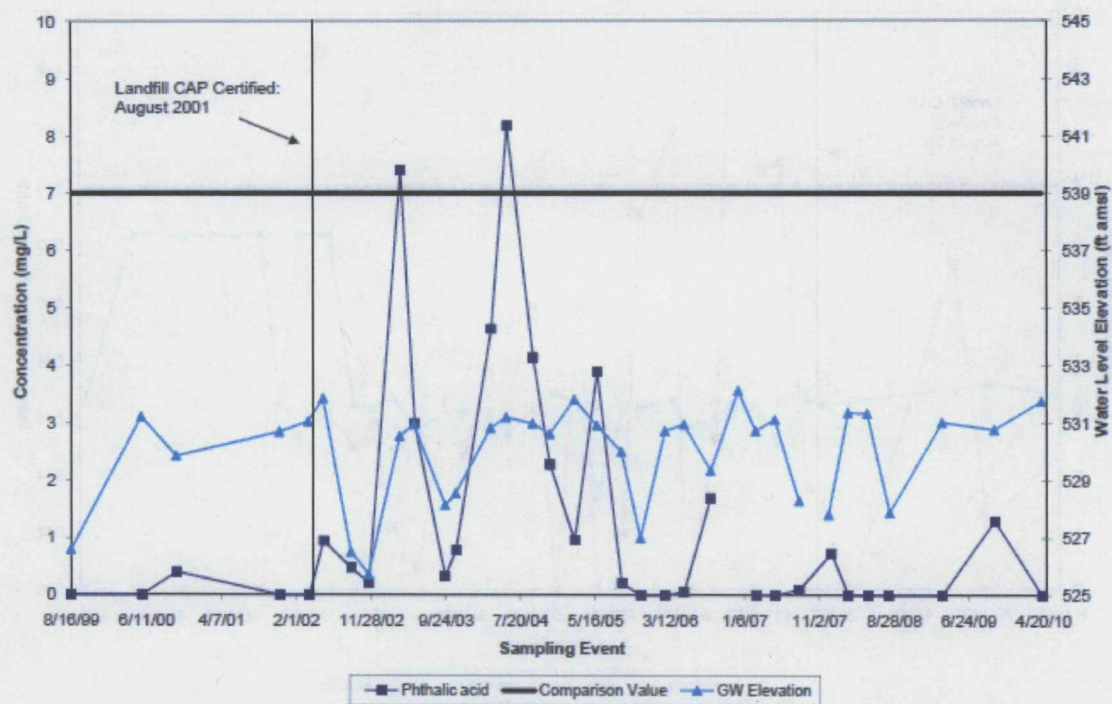
Phthalic Acid and Groundwater Trends for MW-100-99 (Sentinel)



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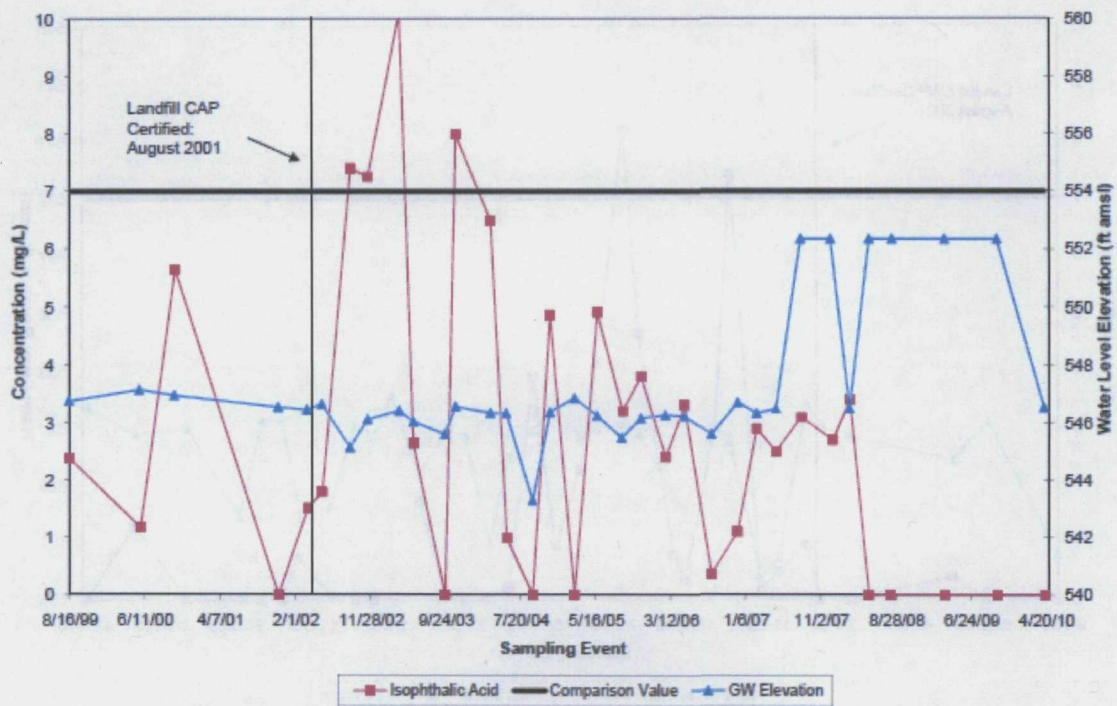


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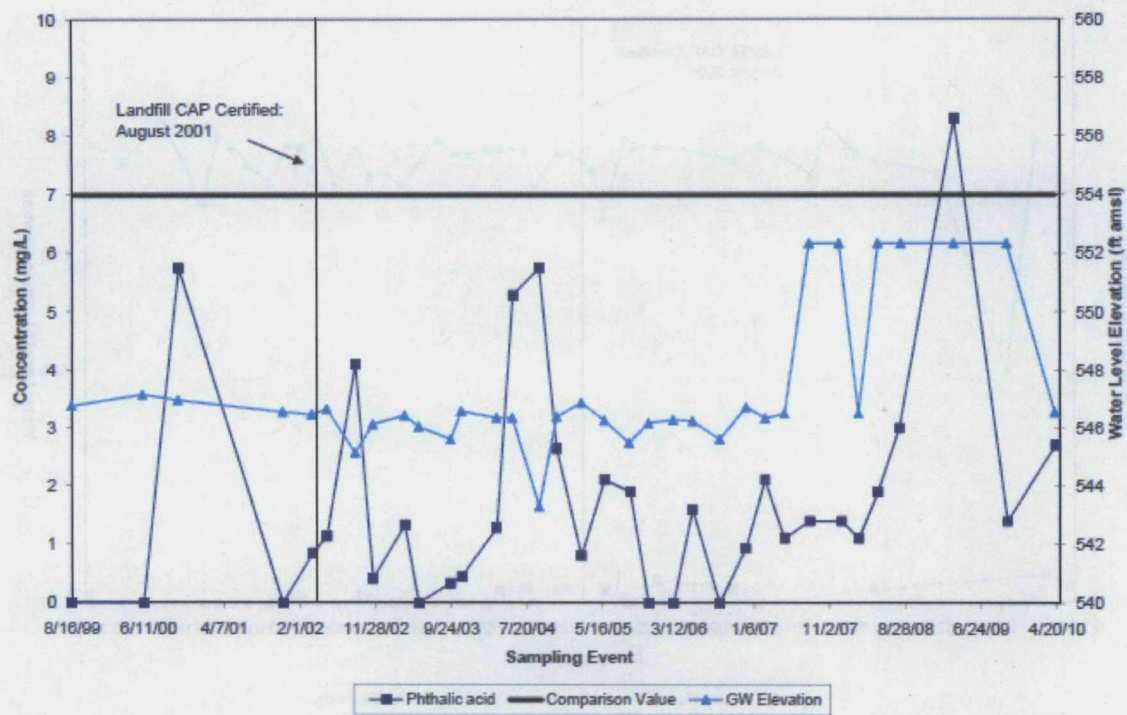




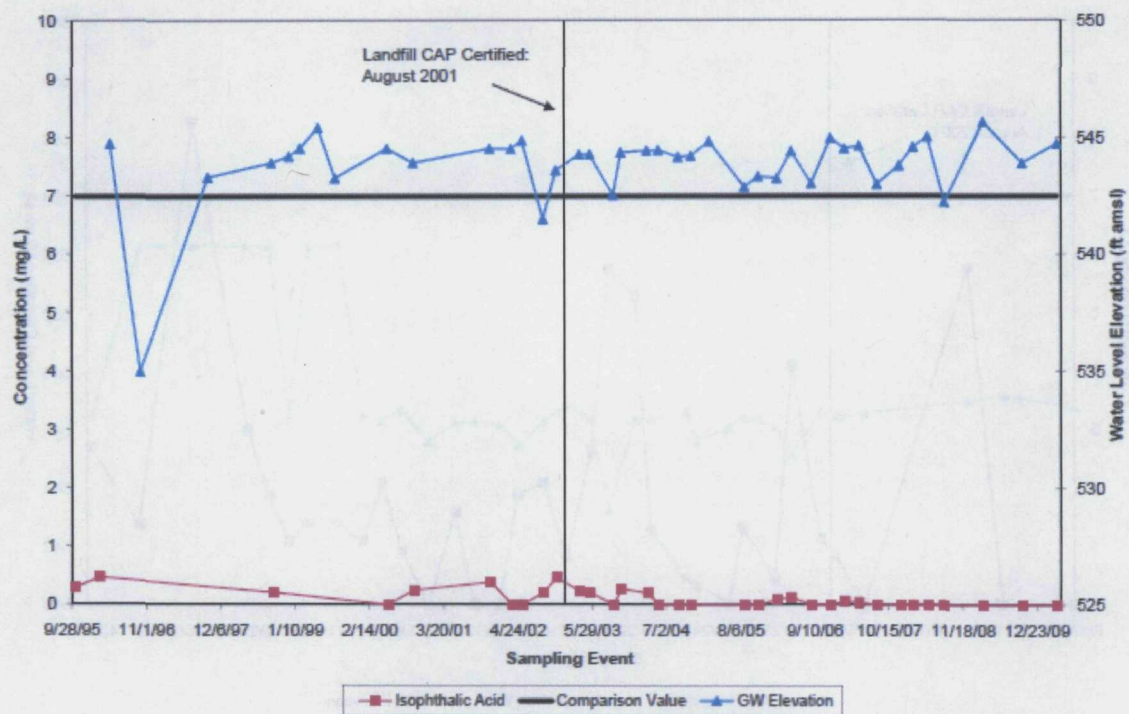
Isophthalic Acid and Groundwater Trends for MW-102-99 (Sentinel)



Phthalic Acid and Groundwater Trends for MW-102-99 (Sentinel)

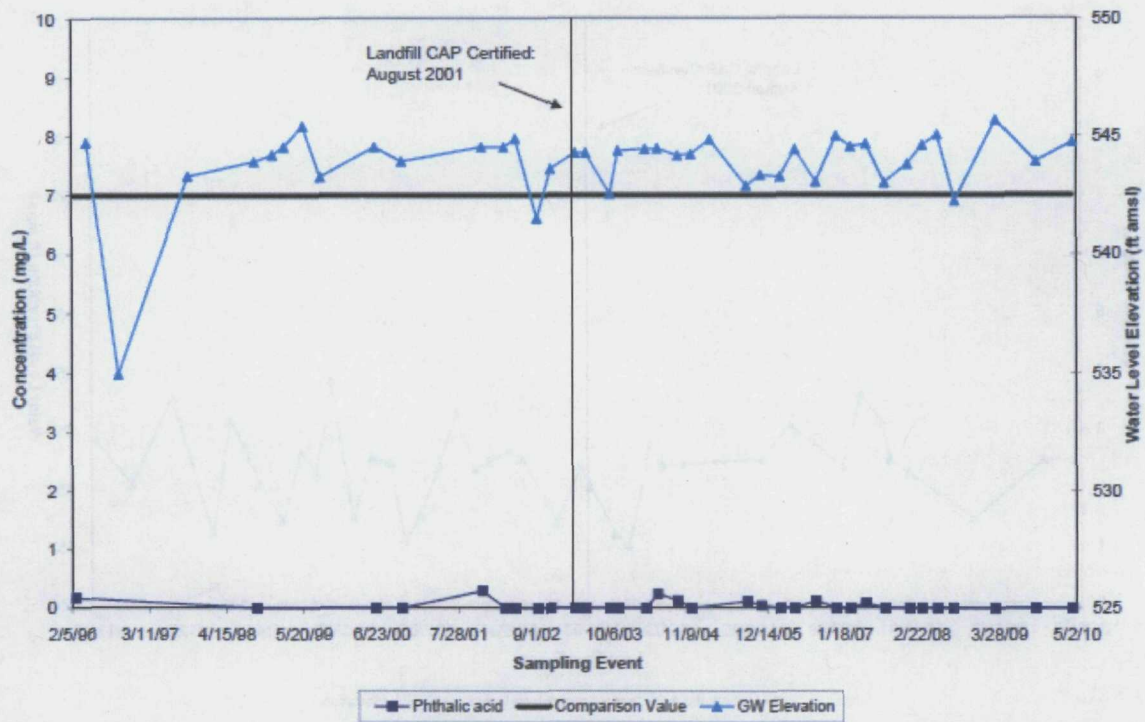


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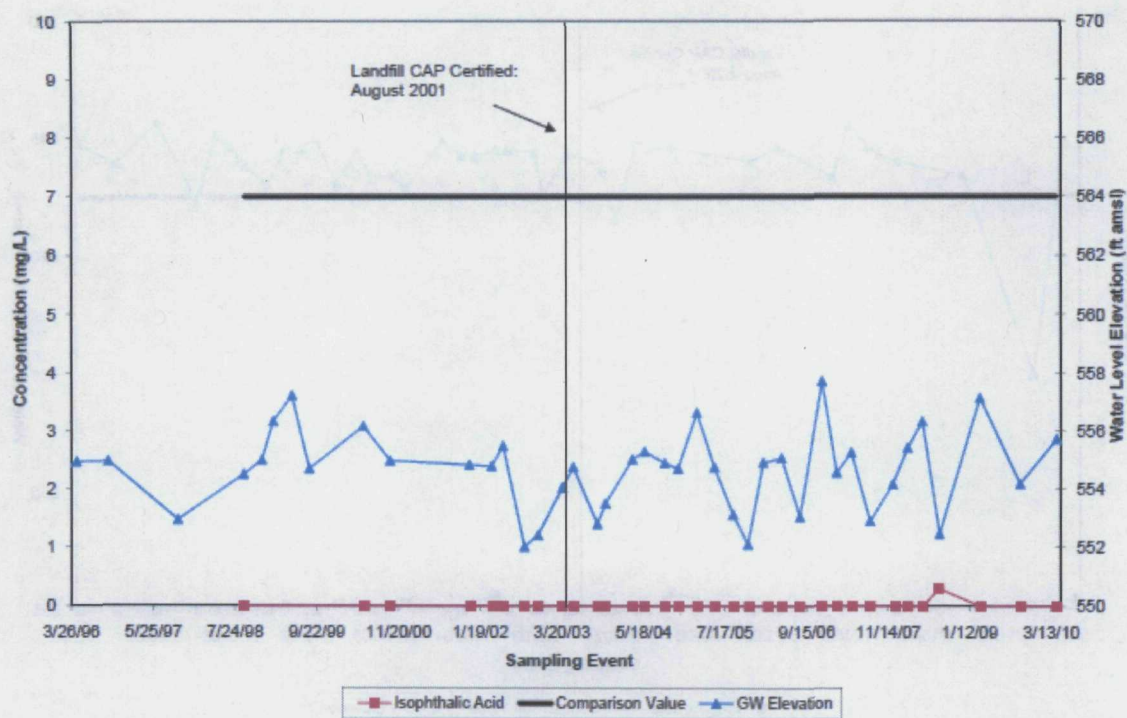




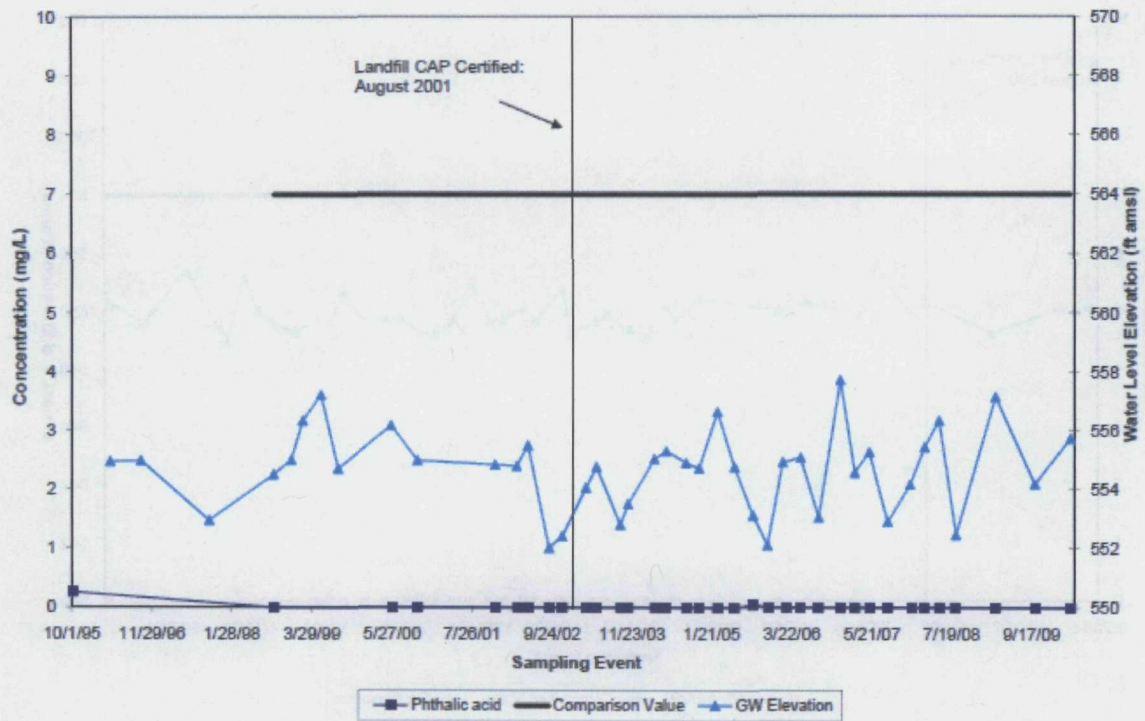
Phthalic Acid and Groundwater Trends for MW-45-88 (Sentinel)



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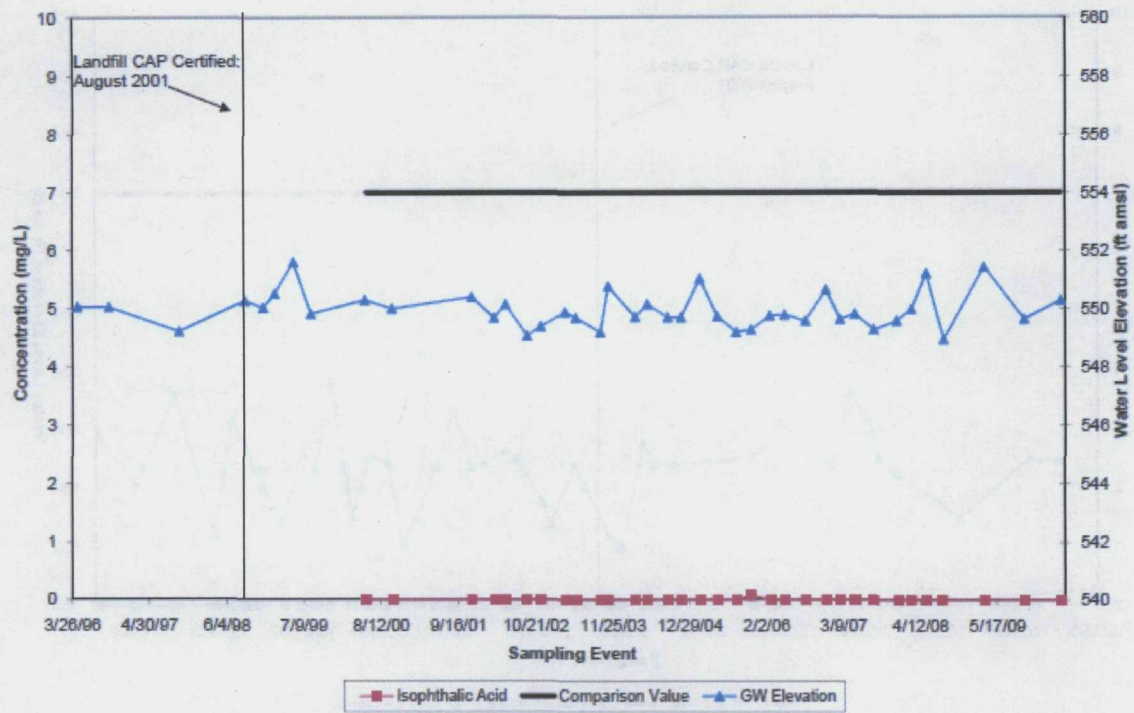


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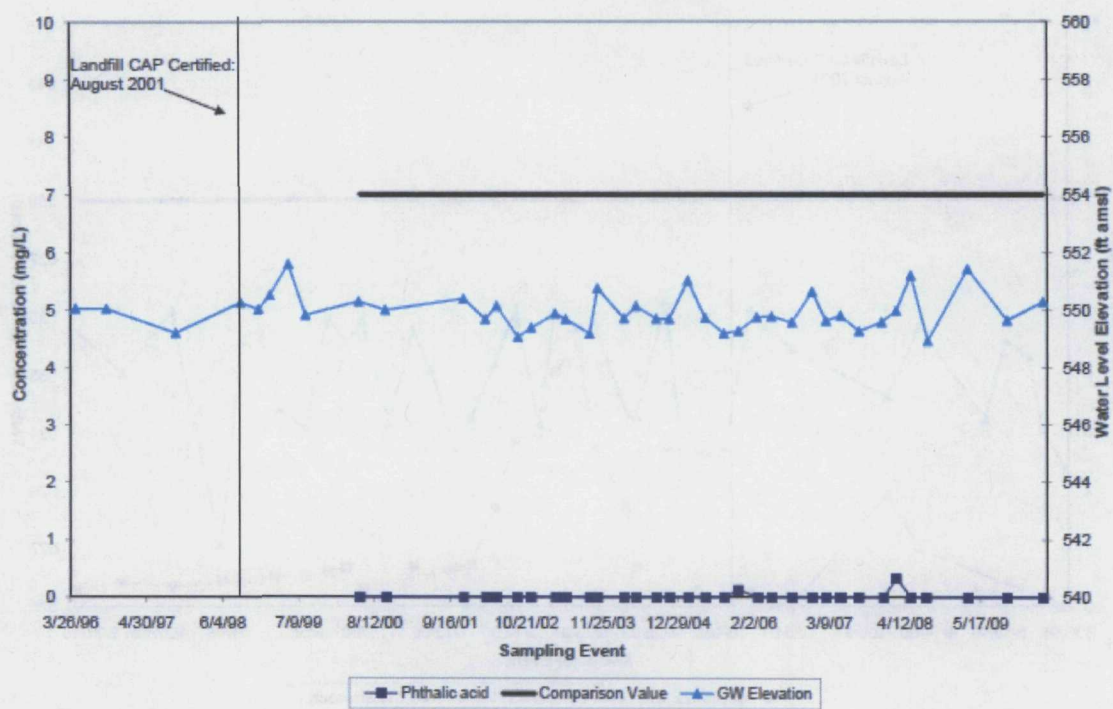




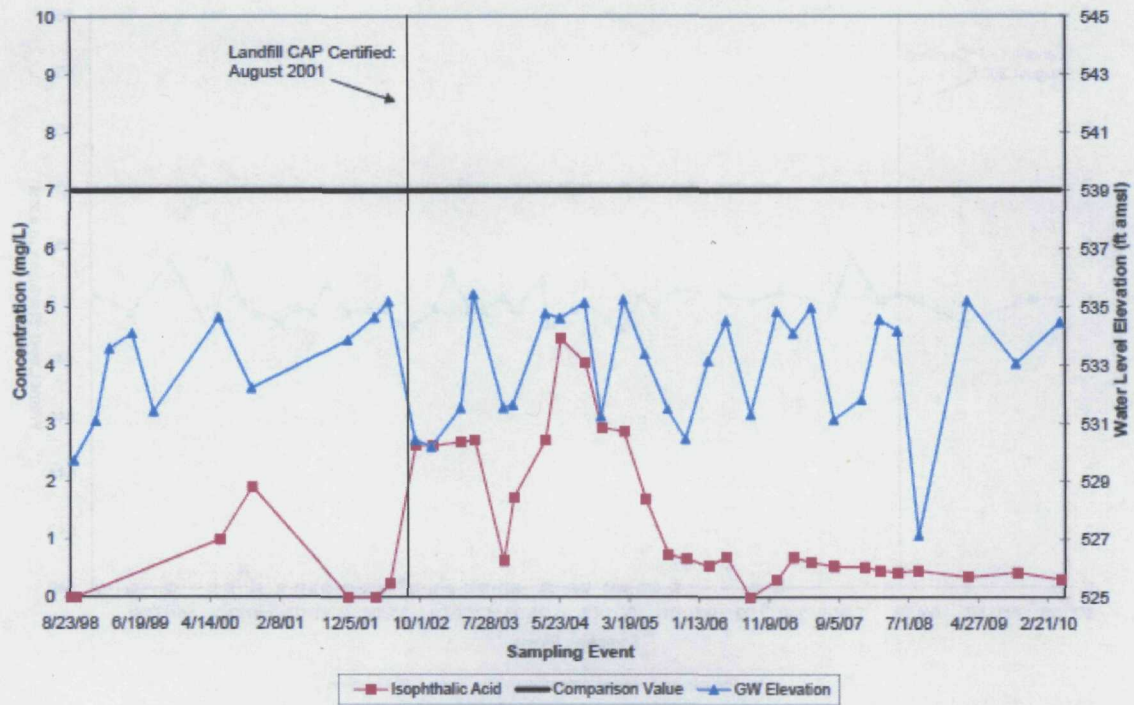
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Phthalic Acid and Groundwater Trends for MW-51-89 (Sentinel)

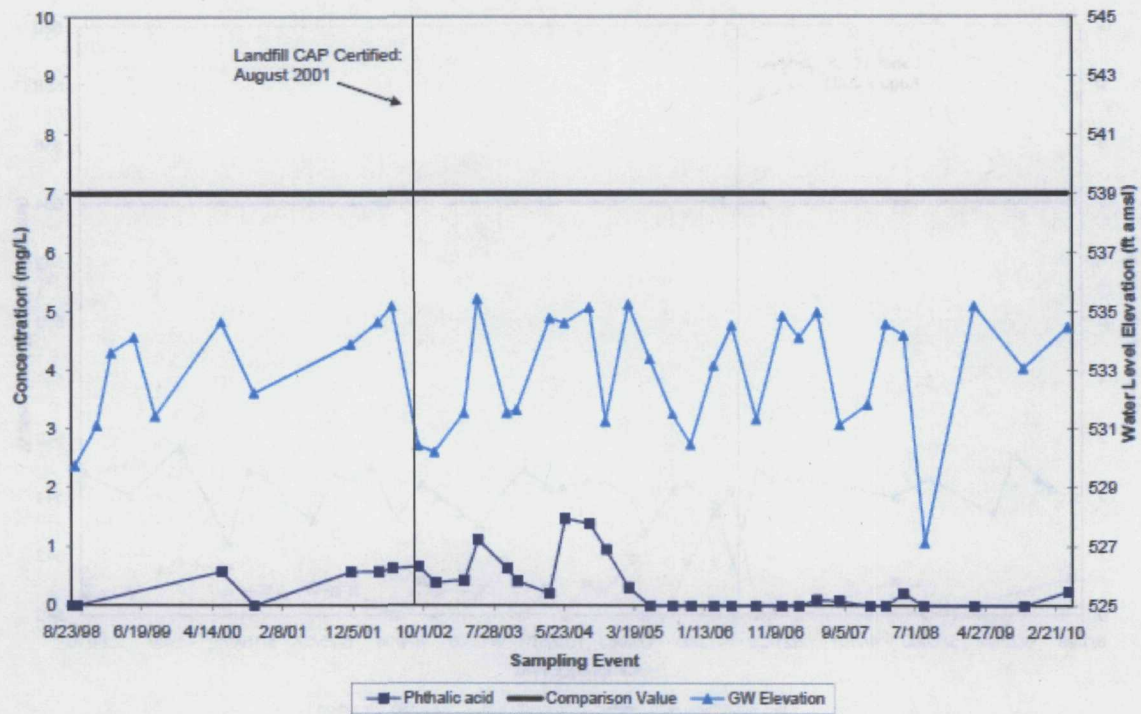


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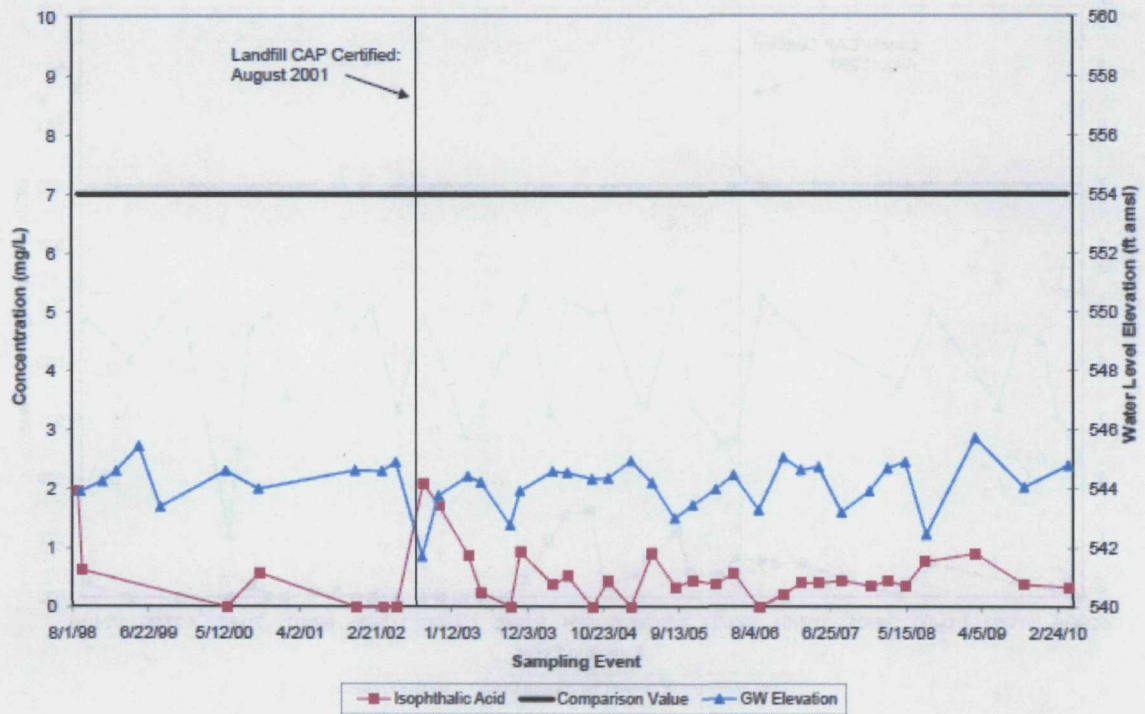




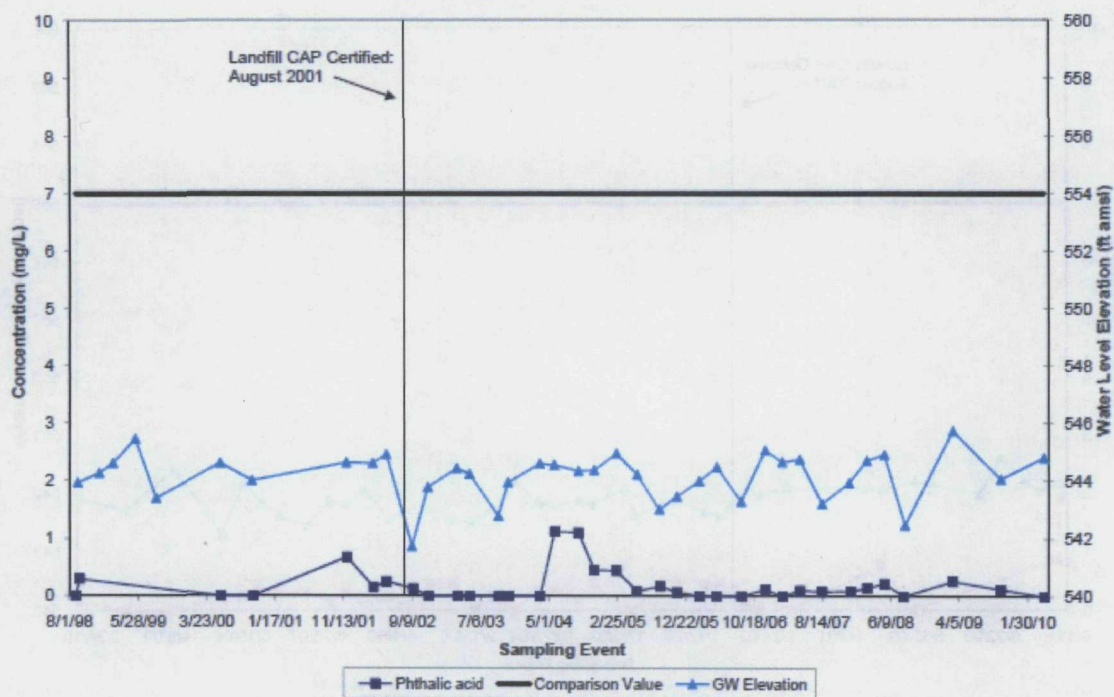
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Isophthalic Acid and Groundwater Trends for MW-92-98 (Sentinel)

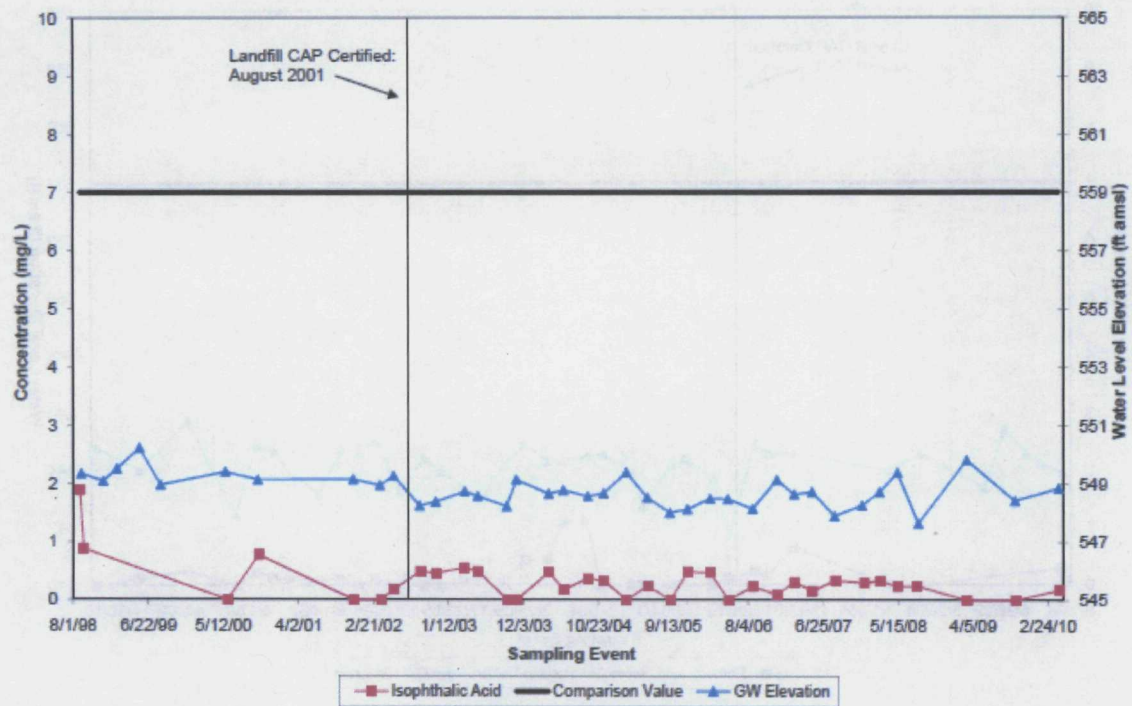


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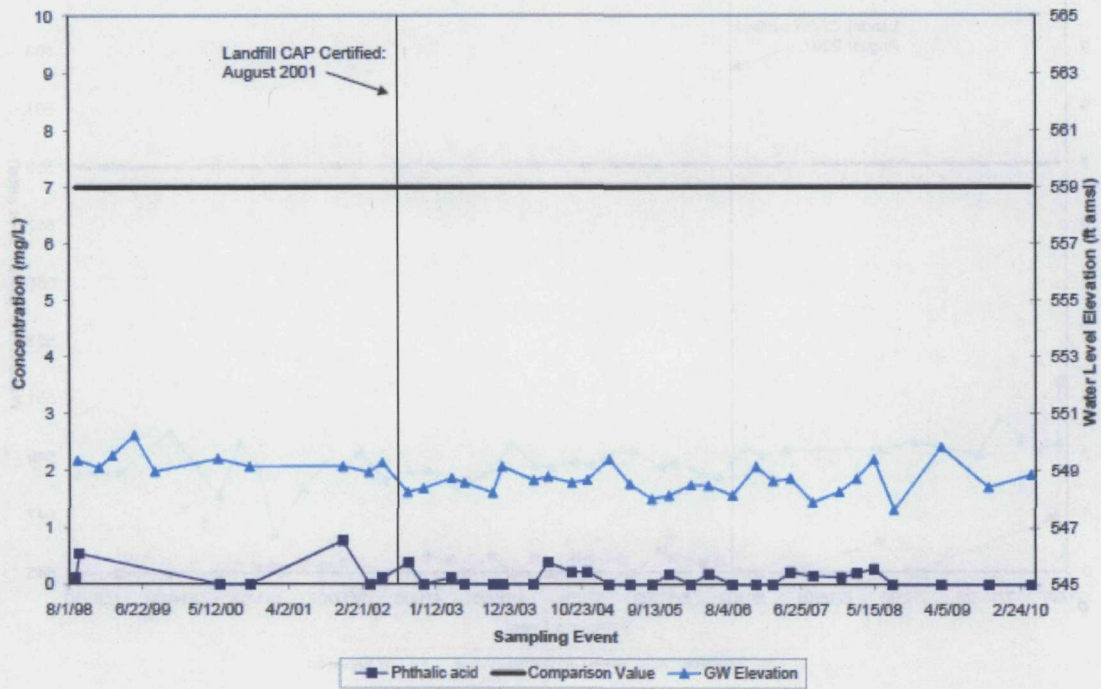




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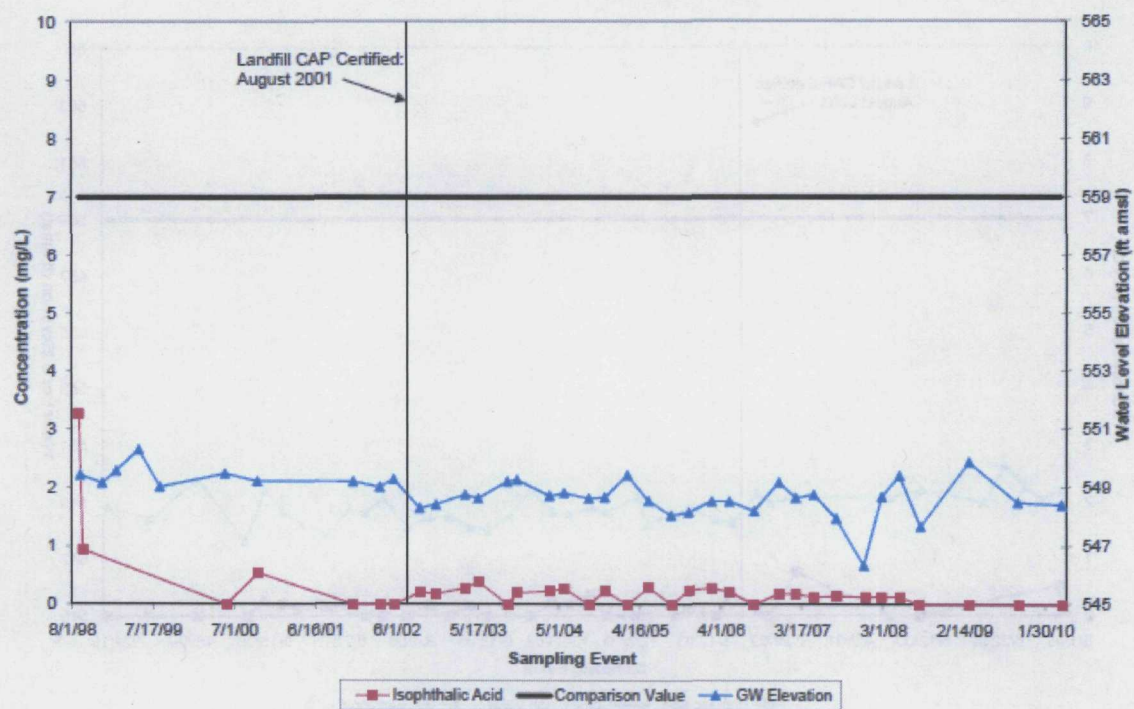


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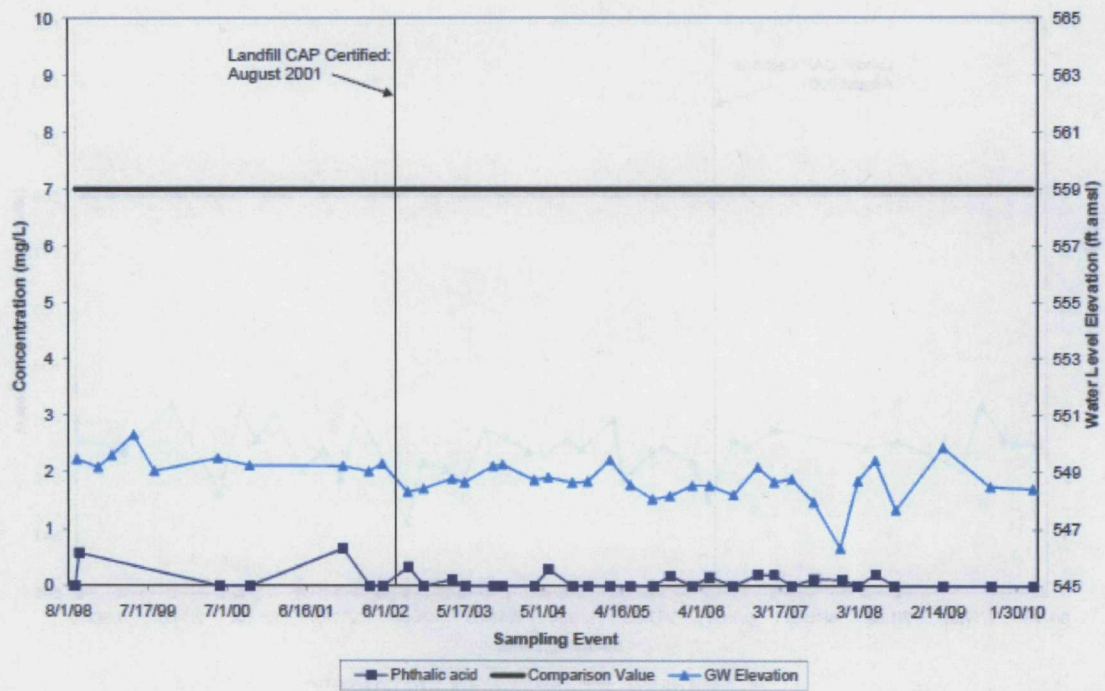




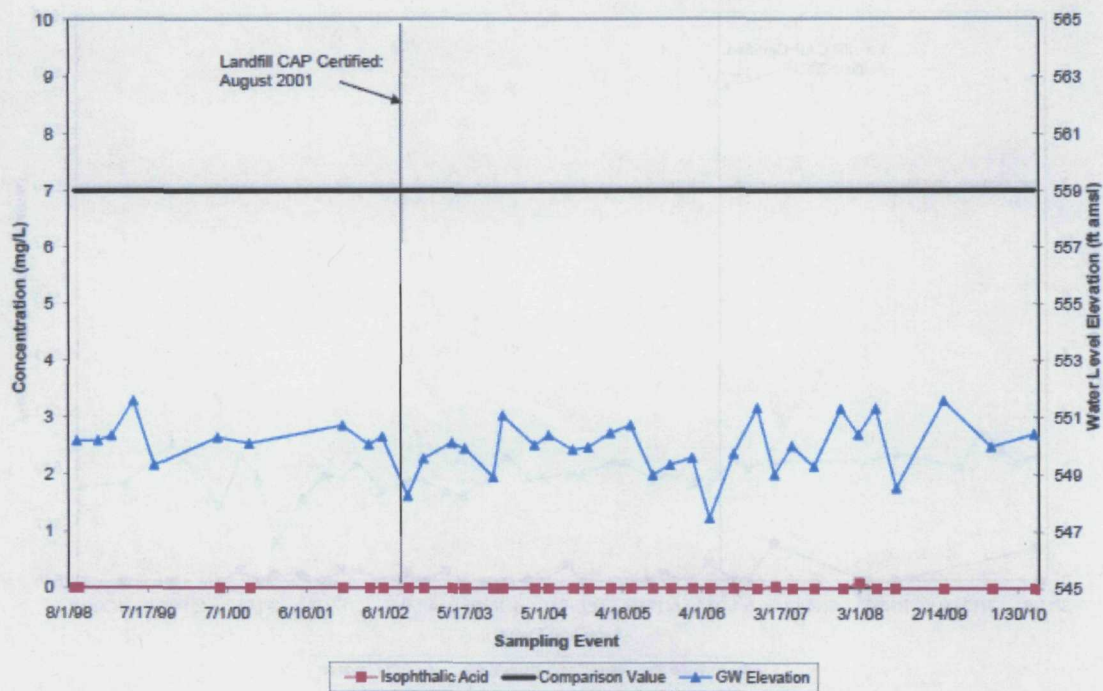
# Isophthalic Acid and Groundwater Trends for MW-95-98 (Sentinel)



Phthalic Acid and Groundwater Trends for MW-95-98 (Sentinel)

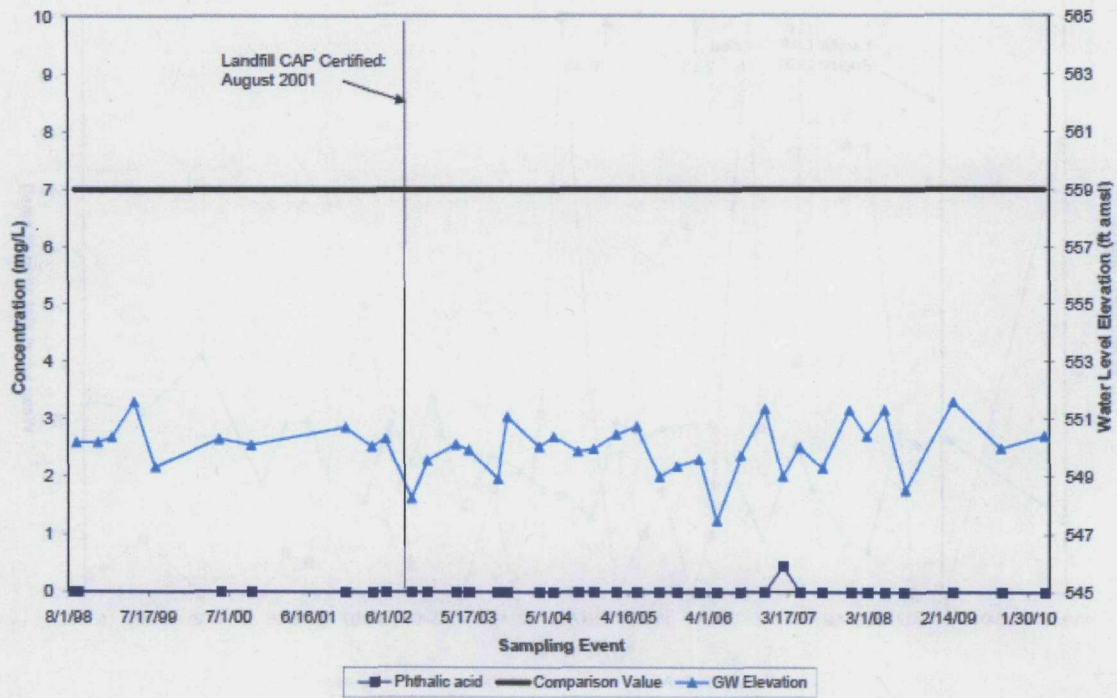


Isophthalic Acid and Groundwater Trends for MW-96-98 (Sentinel)

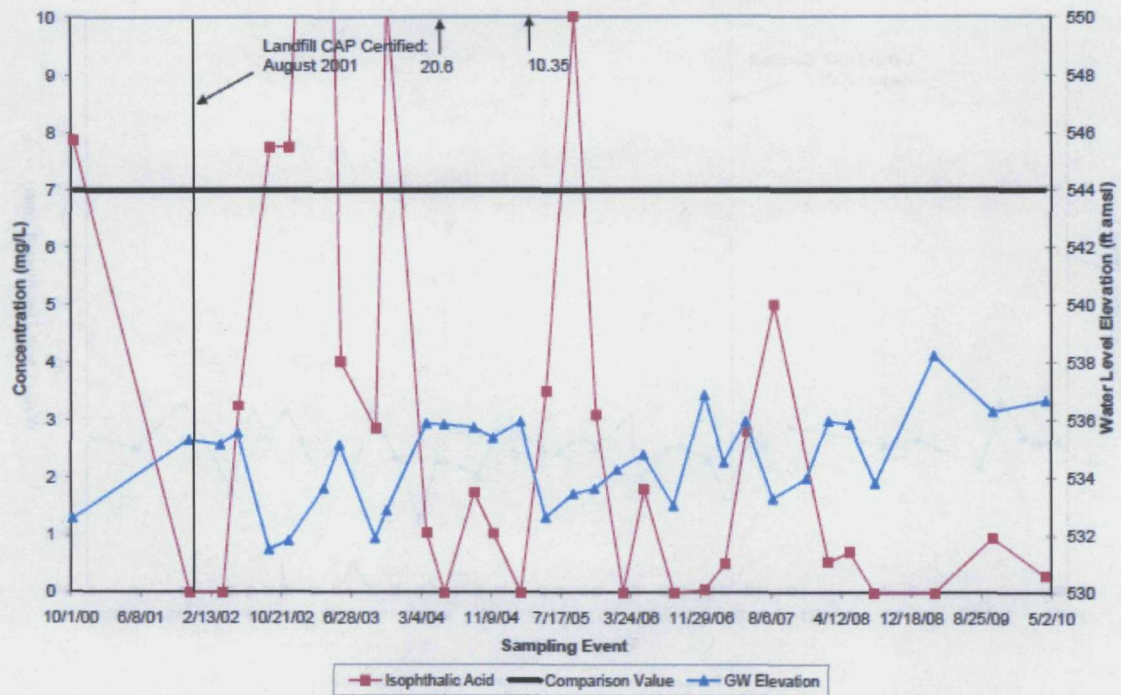




# Phthalic Acid and Groundwater Trends for MW-96-98 (Sentinel)

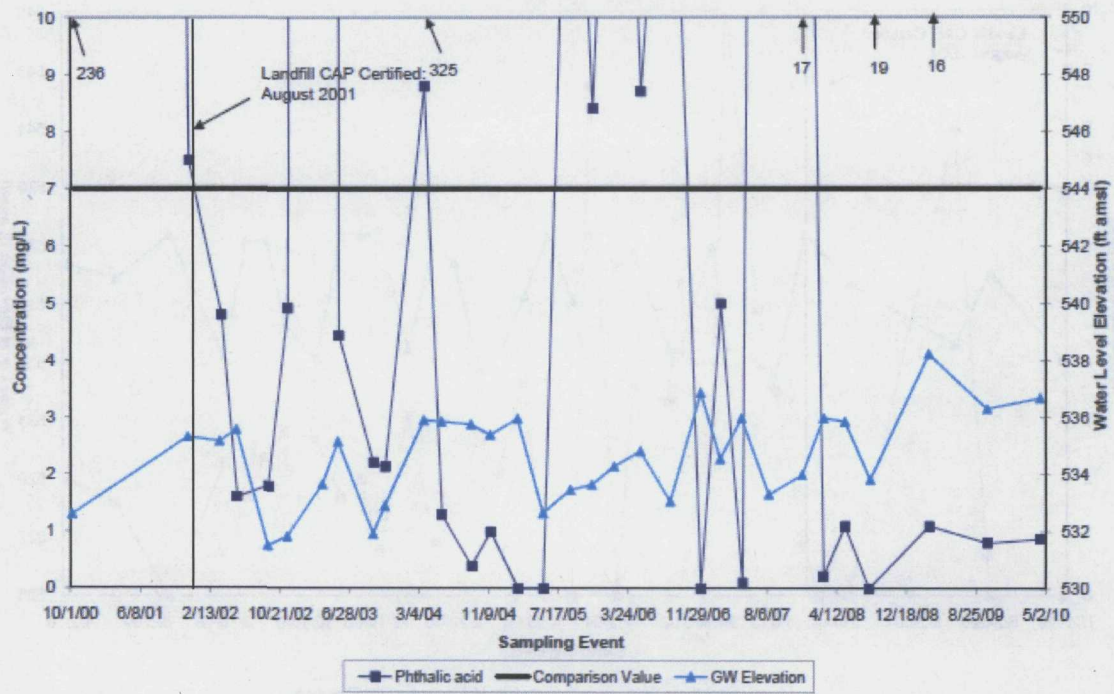


Isophthalic Acid and Groundwater Trends for MW-97R-00 (Sentinel)

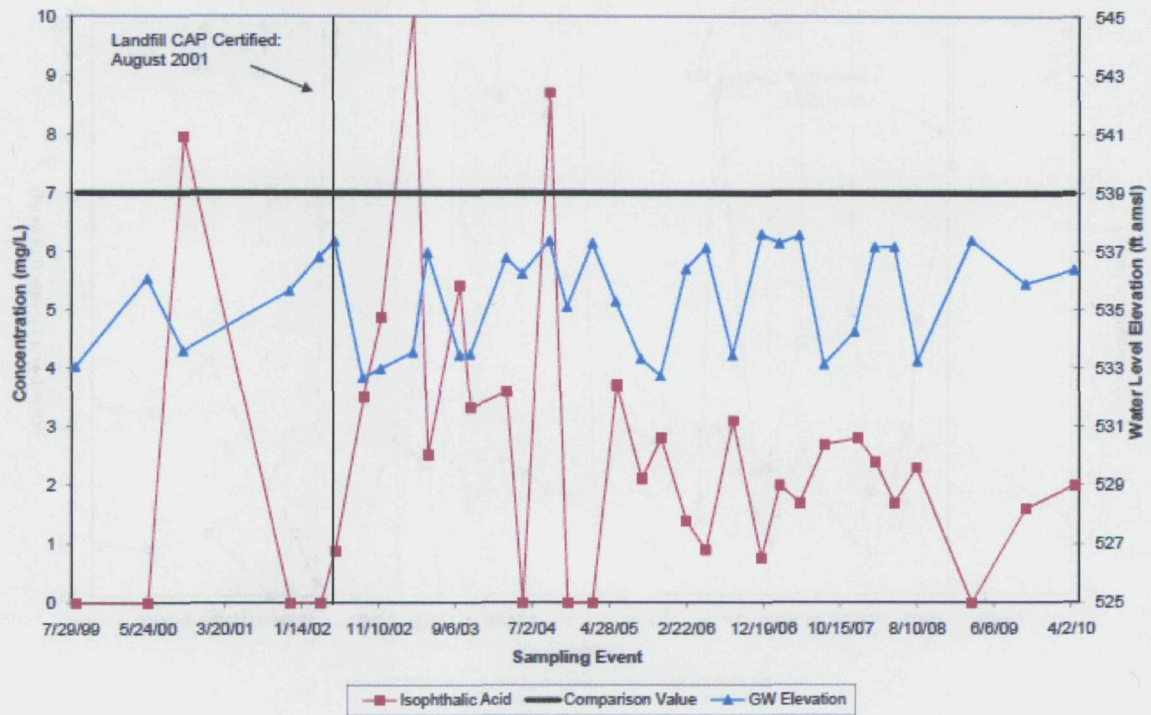




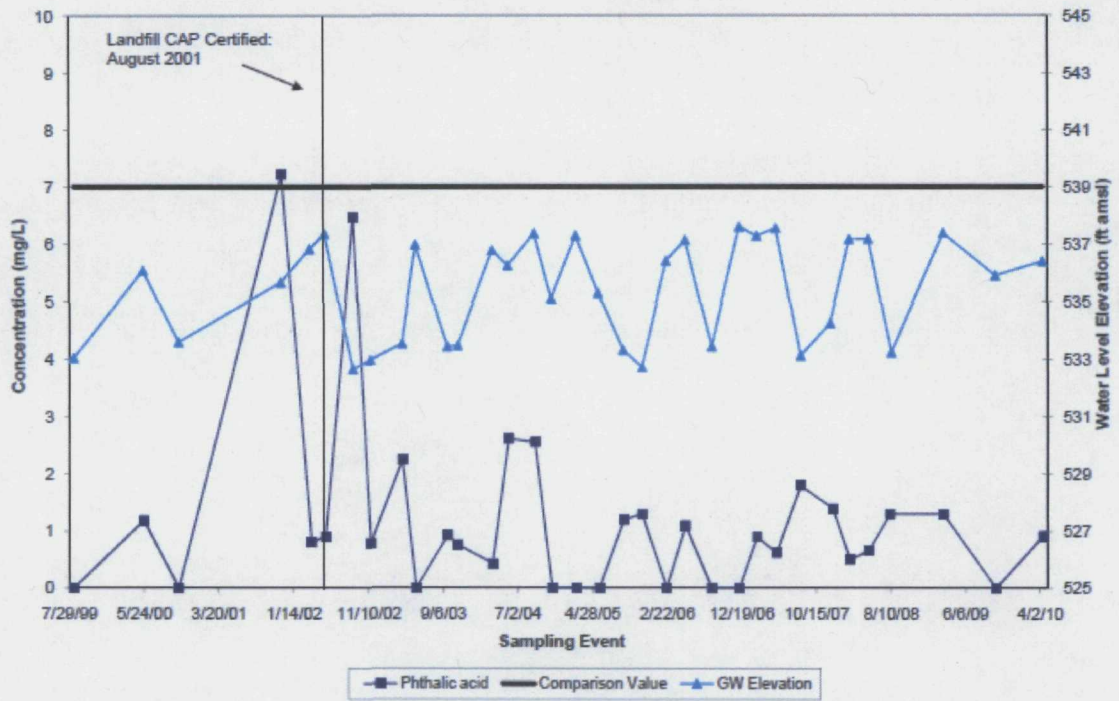
Phthalic Acid and Groundwater Trends for MW-97R-00 (Sentinel)



# Isophthalic Acid and Groundwater Trends for MW-98-99 (Sentinel)

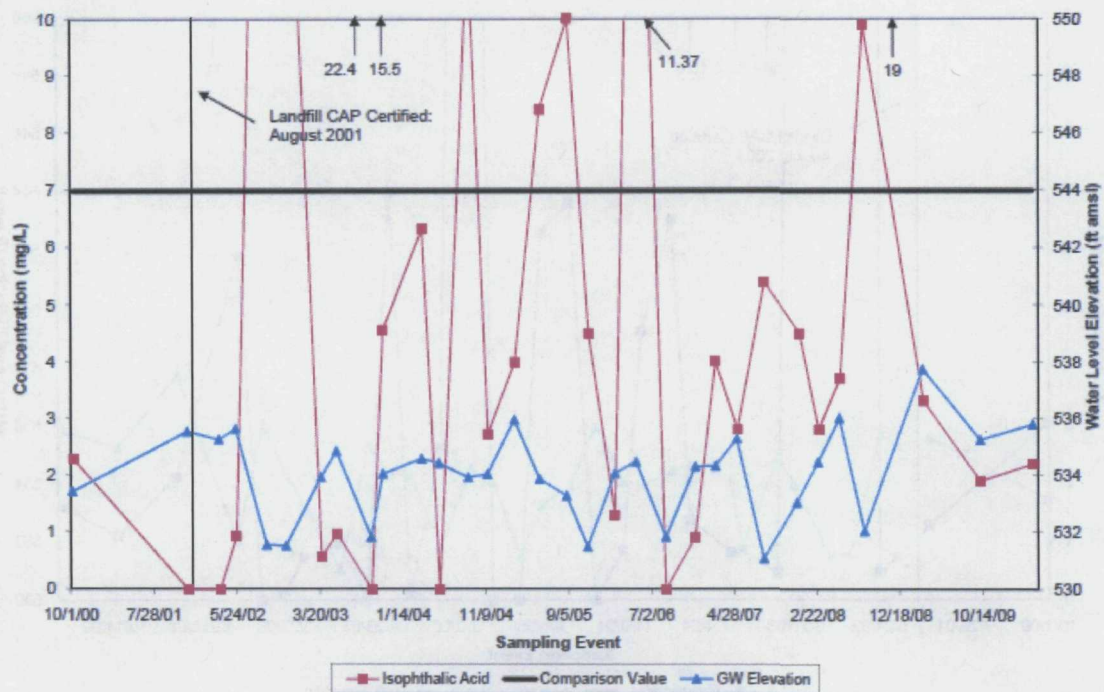


Phthalic Acid and Groundwater Trends for MW-98-99 (Sentinel)



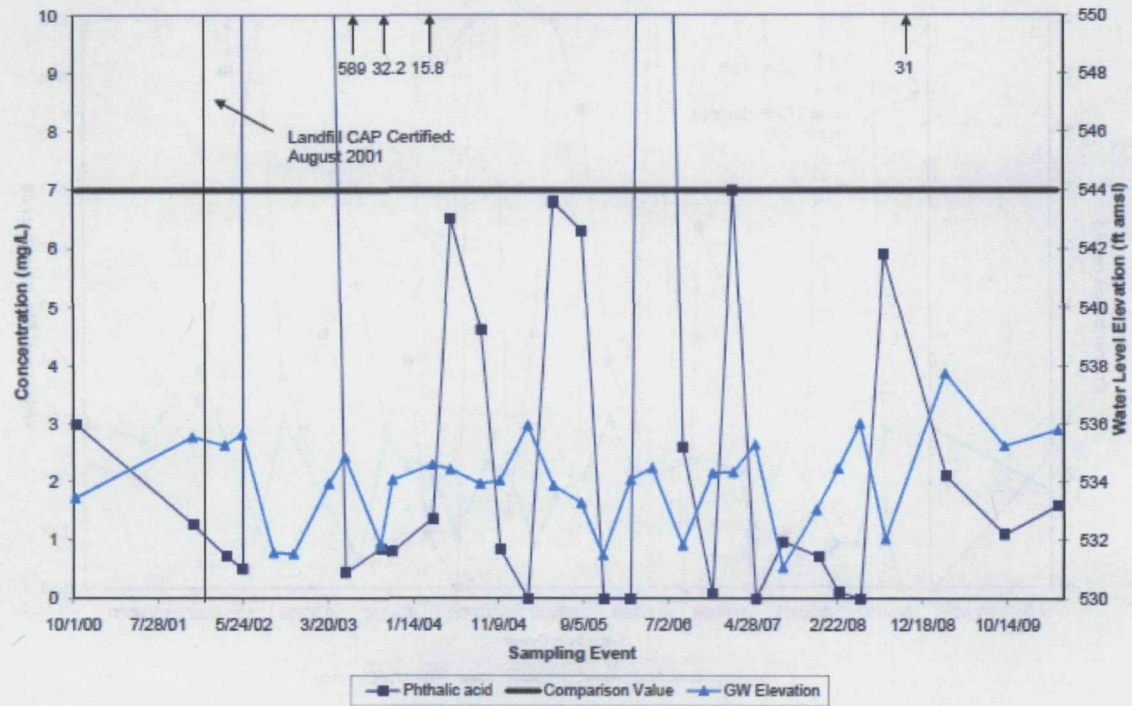


Isophthalic Acid and Groundwater Trends for MW-99R-00 (Sentinel)





Phthalic Acid and Groundwater Trends for MW-99R-00 (Sentinel)



MW-99R-00\_0510.xls

8/10/2010

## APPENDIX D

# MONITORING WELL GROUNDWATER ELEVATIONS

SUMMARY OF GROUNDWATER ELEVATIONS - APRIL 12, 2010  
INTERIM POST-CLOSURE GROUNDWATER MONITORING PROGRAM  
FORMER BP AMOCO JOLIET LANDFILL SITE  
JOLIET, IL

Location	Reference Elevation	Depth to Groundwater	Groundwater Elevation
	(ft NGVD) <sup>1</sup>	(ft btoc) <sup>2</sup>	(ft NGVD)
<b>HSU1 Wells</b>			
A-12	555.93	5.50	550.43
MW-103-01	567.53	11.77	555.76
MW-104-01	566.28	11.48	554.80
MW-105-01	560.14	8.26	551.88
MW-106-01	564.57	9.30	555.27
MW-107-01	555.42	5.68	549.74
MW-108-01	542.56	9.55	533.01
MW-109-01	569.34	17.90	551.44
MW-112-02	551.39	8.97	542.42
MW-113-02	545.22	14.61	530.61
<b>Piezometers</b>			
PZ-11-01	566.87	7.19	559.68
PZ-12-01	572.23	20.18	552.05
PZ-13-01	561.27	10.72	550.55
PZ-14-01	559.62	9.58	550.04
PZ-15-01	568.59	15.54	553.05
PZ-16-01	574.16	NM	NM
PZ-17-01	567.93	17.15	550.78
PZ-18-01	567.99	19.78	548.21
PZ-19-01	547.47	13.29	534.18
PZ-20-01	545.38	8.60	536.78
<b>Transition Zone Wells</b>			
MW-13R-99	568.80	16.45	552.35
MW-45-88	558.00	13.25	544.75
MW-63R-94	539.69	7.48	532.21

<sup>1</sup> ft NGVD - feet as referenced to National Geodetic Vertical Datum

<sup>2</sup> ft btoc - feet below top of casing

<sup>3</sup> GWIT - groundwater interceptor trench

<sup>4</sup> NM - Not Measured - Well not accessible due to elevated riser preventing well case to open.

**SUMMARY OF GROUNDWATER ELEVATIONS - APRIL 12, 2010**  
**INTERIM POST-CLOSURE GROUNDWATER MONITORING PROGRAM**  
**FORMER BP AMOCO JOLIET LANDFILL SITE**  
**JOLIET, IL**

Location	Reference Elevation	Depth to Groundwater	Groundwater Elevation
	(ft NGVD) <sup>1</sup>	(ft btoc) <sup>2</sup>	(ft NGVD)
<b>HSU2 Wells</b>			
D-3	535.05	2.92	532.13
MW-49-89	560.67	4.96	555.71
MW-51-89	557.43	7.14	550.29
MW-65-89	528.70	4.13	524.57
MW-66-89	527.70	4.97	522.73
MW-67-89	526.60	3.75	522.85
MW-68-89	525.70	2.89	522.81
MW-69-90	532.78	4.18	528.60
MW-86-98	535.01	6.43	528.58
MW-88-98	540.83	6.35	534.48
MW-92-98	556.52	11.72	544.80
MW-94-98	555.01	6.15	548.86
MW-95-98	554.51	6.10	548.41
MW-96-98	555.20	4.79	550.41
MW-97R-00	541.40	4.71	536.69
MW-98-99	540.68	4.29	536.39
MW-99R-00	540.85	5.07	535.78
MW-100-99	539.84	3.54	536.30
MW-101-99	535.21	3.45	531.76
MW-102-99	552.34	5.80	546.54
<b>Select GWIT<sup>3</sup> Locations</b>			
MW-62-89	540.77	6.74	534.03
PZ-5-98	554.55	11.21	543.34
PZ-6-98	544.54	15.54	529.00
PZ-7-99	551.28	6.89	544.39
PZ-8-99	543.12	9.96	533.16
MS-8	543.51	4.01	539.50
MS-11	540.77	13.48	527.29
EG-323	547.77	20.48	527.29
EG-324	544.96	17.51	527.45

<sup>1</sup> ft NGVD - feet as referenced to National Geodetic Vertical Datum

<sup>2</sup> ft btoc - feet below top of casing

<sup>3</sup> GWIT - groundwater interceptor trench

<sup>4</sup> NM - Not Measured - Well not accessible due to elevated riser preventing well case to open.

## APPENDIX E

### COMMENTS RECEIVED FROM SUPPORT AGENCIES AND/OR THE COMMUNITY

1). **Who monitors groundwater?**

AECOM Technical Services, Inc. monitors groundwater on behalf of Atlantic Richfield Company, a BP affiliate

**How often?**

Groundwater sampling is performed semiannually during April and October as part of the Interim Post Closure Groundwater Monitoring Program.

**Does Illinois EPA get data?**

Yes, Illinois EPA receives the data in a semiannual report summarizing the groundwater sampling events.

2). **Does the Joliet Westside wastewater treatment plant test the leachate from BP Amoco?**

Yes, the POTW samples the effluent from the landfill annually. As required by the permit, AECOM also tests the leachate monthly for biological oxygen demand, chemical oxygen demand, total suspended solids, and pH. In January and July, the permit requires expanded sampling to include other water quality parameters and the landfill constituents of concern.

**If no, does anyone test the leachate?**

See above.

3). **Does the Joliet wastewater treatment plant test their discharge water for contaminants that may have come from the Amoco leachate?**

Yes, the wastewater treatment plant analyzes for six of the constituents that the Amoco landfill has in its leachate discharge.

4). **How much leachate is handled by the wastewater treatment plant?**

The average discharge rate of leachate handled by the wastewater treatment plant is 1,400,000 gallons per month, based on the collected since June 2007. The discharge rate fluctuates relative to wet and dry seasons.

5). **Is the leachate pre-treated before being piped to the Joliet wastewater plant?**

No, the concentrations present in the leachate are within the limits of the wastewater treatment plant, so no pre-treatment is necessary. The City of Joliet POTW permit specifies the need to immediately report any exceedances of permit limits from the monthly samples, and the plant operator decides if any corrective action or pre-treatment will be required. No such actions have been needed.



6). **Who monitors the Superfund Site?**

Illinois EPA completed a Consent Decree (CD) with BP Amoco on April 24, 2000 to implement the requirements of the Record of Decision (ROD), issued on July 15, 1999, for the landfill operable unit (LFOU) at the Site. U.S.EPA concurred with the LFOU ROD. The ROD specifies that RCRA landfill caps would be placed on the north and south landfill, and that a leachate collection system be installed down gradient of the landfills. Illinois EPA provides oversight and review (with the assistance of Illinois EPA consultants CDM) for all documents and field work completed by BP Amoco in design and construction of the caps. AECOM completes field activities on behalf of BP.

**How often?**

AECOM performs biweekly, quarterly, and annual inspections in accordance with the O&M plans, and these inspections are summarized in the monthly progress reports submitted to Illinois EPA. Semiannual inspections of the landfill are performed by AECOM and Illinois EPA and/or their consultant CDM, and site conditions requiring corrective actions are identified in a checklist and reported in the next monthly progress report. Illinois EPA or their consultants CDM provide field oversight for installation, investigation, or repair of any activities conducted by BP Amoco or AECOM on an as needed basis.

# APPENDIX F

## INSTITUTIONAL CONTROL STUDY

**AECOM**

AECOM  
27755 Diehl Road, Suite 100  
Warrenville, IL 60555

630.836.1700 tel  
630.836.1711 fax

September 1, 2010

Mr. Eric D. Runkel  
Project Manager  
National Priorities List Unit  
Illinois Environmental Protection Agency  
1021 North Grand Ave. East  
Springfield, Illinois 62704

**Subject: Institutional Control Study  
BP Amoco Chemical Landfill Superfund Site – Joliet, Illinois  
1978000001 – Will County  
AECOM Project No.: 60149353.733**

Dear Mr. Runkel:

AECOM Technical Services, Inc. (AECOM) is pleased to submit, on behalf of Atlantic Richfield Company (ARCO), the following Institutional Control Study for the BP Amoco Chemical Landfill (Site) located in Joliet, Will County, Illinois (Figure 1) to the Illinois Environmental Protection Agency (IEPA). The IEPA is reviewing institutional controls (ICs) on behalf of the United States Environmental Protection Agency (USEPA). The goal of the review is to determine if ICs required by the Record of Decision (ROD) or consent decree currently exist, identify corrective measures and recommend new or additional ICs.

The ROD, dated July 15, 1999, states the following: "The real estate deed will be amended to include prohibition of on-site groundwater use, on-site building construction and on-site drilling except for the purpose of remedial design, sampling, monitoring and remedial action."

The Site consists of two separate parcels. Parcel number 0410113000020010 and parcel number 0410113000020020. Figure 2 depicts the parcel boundaries. The site is idle with no structures or activities beyond those required to maintain the closed landfill and monitor groundwater, as defined in the ROD.

The IC Study is divided into three sections: 1) review and assessment of existing ICs; 2) compliance and effectiveness of ICs; and 3) recommendations.

### Existing Proprietary Controls

The Site currently has an IC in the form of an Environmental Land Use Control (ELUC). The ELUC is attached to the property title, meaning it "runs with the property". The ELUC states:

- Groundwater which underlies the Site shall not be used for potable water.
- No water supply well shall be installed or otherwise used for any purpose at the Site.



AECOM  
27755 Diehl Road, Suite 100  
Warrenville, IL 60555

630.836.1700 tel  
630.836.1711 fax

September 1, 2010

Mr. Eric D. Runkel  
Project Manager  
National Priorities List Unit  
Illinois Environmental Protection Agency  
1021 North Grand Ave. East  
Springfield, Illinois 62794

**Subject: Institutional Control Study  
BP Amoco Chemical Landfill Superfund Site – Joliet, Illinois  
1978000001 – Will County  
AECOM Project No.: 60149353.733**

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## **Existing Proprietary Controls**

The Site currently has an IC in the form of an Environmental Land Use Control (ELUC). The ELUC is attached to the property title, meaning it "runs with the property". The ELUC states:

- Groundwater which underlies the Site shall not be used for potable water.
- No water supply well shall be installed or otherwise used for any purpose at the Site.

- The Site shall not be used for any agricultural, recreational or residential purpose, or in any manner that would allow children to have the opportunity for exposure to potential contaminants through soil ingestion or inhalation, including but not limited to educational facilities, health care facilities, child care facilities, or outdoor recreational areas.

The ELUC area for the Superfund site has been professionally surveyed by the firm of Ruettiger, Tonelli, & Associates, Inc. of Joliet, Illinois. The American Land and Title Association (ALTA) plat survey was completed and converted to Universal Transverse Mercator (UTM) coordinates. The plat drawings and calculations were completed to within 0.01 foot (ft) tolerance and the field survey was completed within 0.05 ft tolerance. **Figure 3** depicts the surveyed boundaries of the ELUC area. The ELUC encompasses both parcels in their entirety, and matches the boundaries of the restricted area and property boundaries. A CD-ROM is attached to this study containing the coordinates of the ELUC survey in ESRI® polygon-shape file format, as requested by IEPA.

A title insurance commitment was obtained from a title company on the restricted areas. A copy is presented in **Attachment A**. The title commitment identifies the existing ELUC for both parcels. A recorded copy of the ELUC is available in the title commitment.

A portion of the original ELUC area was transferred to Flint Hills Resources during the sale of the adjacent chemical plant in 2003. The approximate location of this ELUC area is depicted in **Figure 4**. Maintenance of the ELUC is the responsibility of Flint Hills Resources; they are obligated to comply with the land and groundwater restrictions as described above.

The property is currently zoned I-3 or "Intensive Industrial District". This eliminates the construction of non-industrial structures such as, but not limited to, residences and schools. There are currently no other relevant governmental controls at the Site.

## Compliance and Effectiveness of ICs

The ICs in place are effectively preventing exposure to pollutants or contaminants. The only potential human or ecological exposure in the area exists at the locations of two intermittent seeps along the bluff east of the landfill. Potential human exposure is limited to incidental contact during sampling activities. Ecological exposure is limited to local wildlife. Nearby creeks, springs, and the Des Plaines River provide said wildlife abundant drinking water sources. The seeps will be evaluated during a supplemental remedial investigation for groundwater scheduled for November-December 2010, and the data will be included in a subsequent risk assessment. The ownership and land use of the Site and the surrounding area have not changed since the ROD and inception of the ELUC. There are no constructed or planned developments in the area, and ARCO does not plan to sell or transfer the property. There have been no water wells installed within the ELUC area, except those for the purpose of groundwater monitoring and/or remediation.

The Site is visited on a biweekly basis by AECOM to perform operations and maintenance (O&M) on the leachate collection system. Semiannual site inspections are completed with IEPA to demonstrate compliance with the consent order and O&M plan. Compliance with the ELUC and condition and use of the Site are checked during these O&M visits and inspections. The site is fenced on three sides and "No Trespassing" signs are posted to prevent unauthorized access.



## Recommendations

AECOM does not recommend changes to the ICs at this time. The existing ICs are comprehensive, maintained and effective at the prohibition of on-site groundwater use, on-site building construction and on-site drilling.

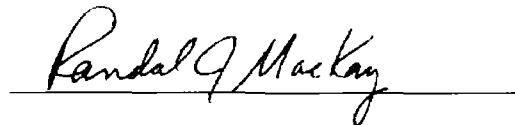
Please feel free to contact either of the undersigned should you have questions or comments.

Sincerely yours,

AECOM Technical Services, Inc.

A handwritten signature in cursive script, appearing to read "Matthew Laub", written over a horizontal line.

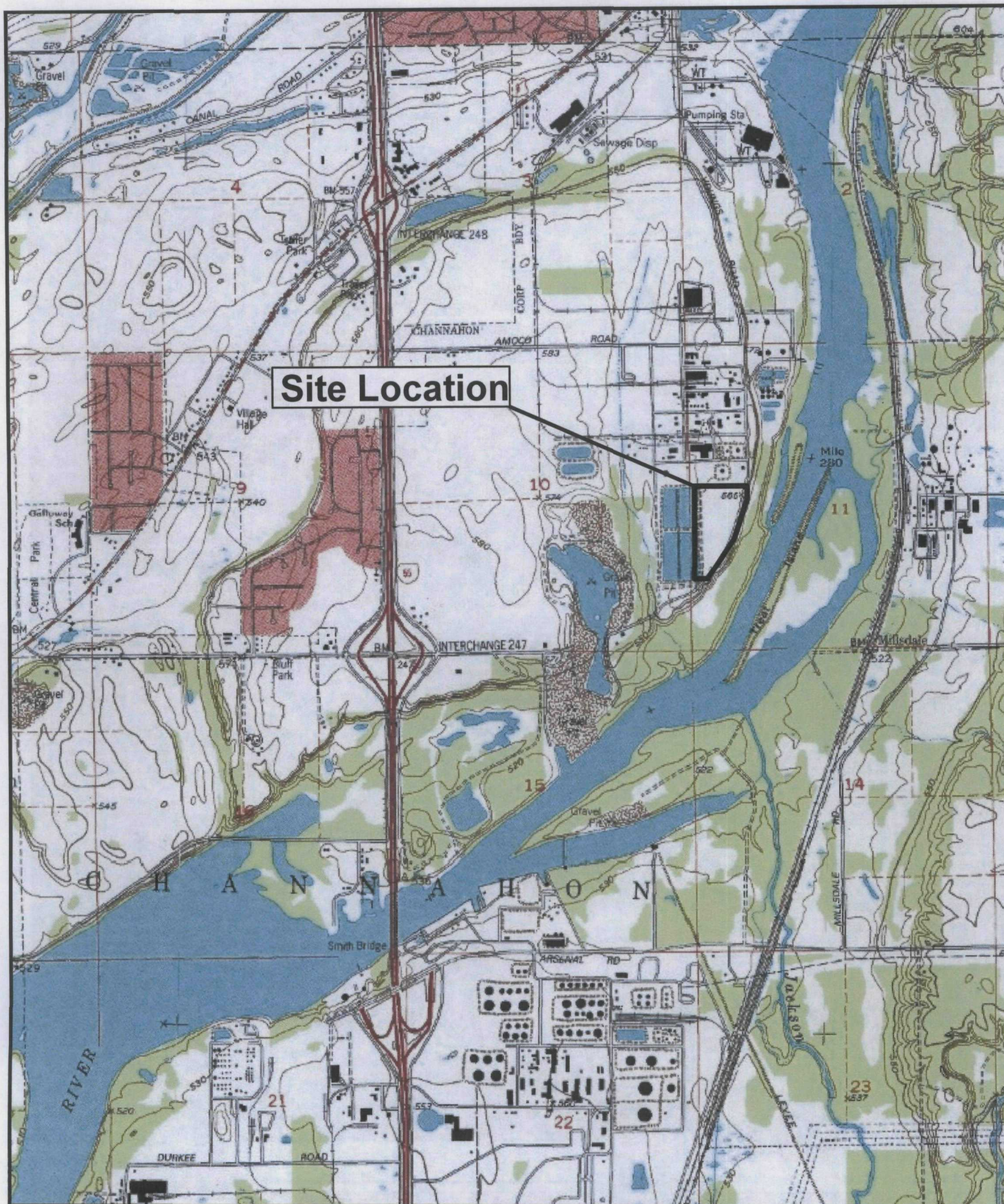
Matthew Laub  
Senior Staff Specialist

A handwritten signature in cursive script, appearing to read "Randal J. MacKay", written over a horizontal line.

Randal J. MacKay  
Project Manager

## Figures





**AECOM**

AECOM  
27755 DIEHL RD. SUITE 100  
WARRENVILLE, ILLINOIS 60555  
PHONE: (630) 836-1700  
FAX: (630) 836-1711  
WEB: [HTTP://WWW.AECOM.COM](http://www.aecom.com)

### Site Location Map

BP Joliet Chemical Landfill Superfund Site  
Joliet, Illinois

FIGURE NUMBER:

1

DRAWN BY:

ML

DATE:

08/30/2010

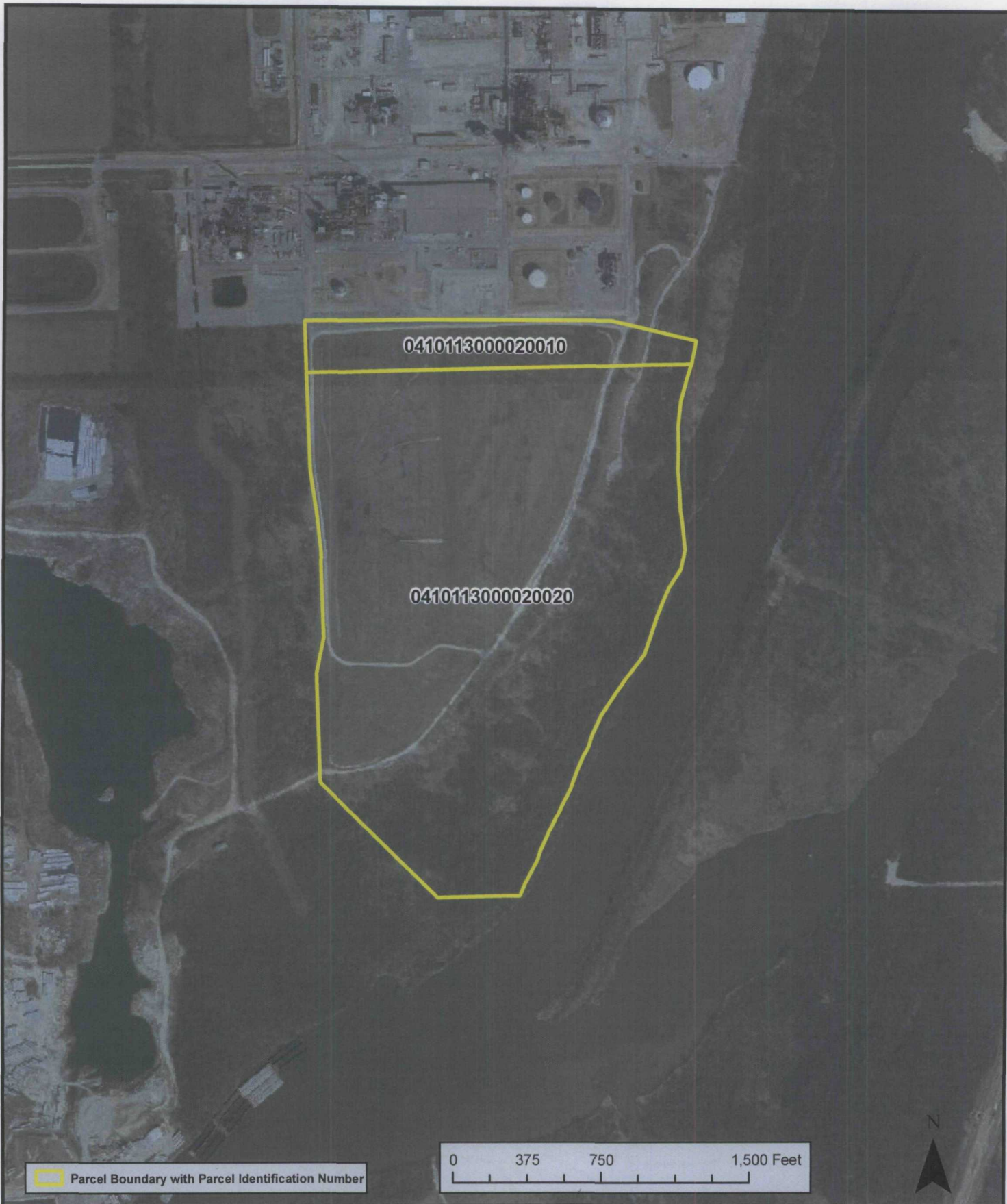
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
60149353

SHEET NUMBER:

1 of 1





 Parcel Boundary with Parcel Identification Number

0 375 750 1,500 Feet



**AECOM**

AECOM  
27755 DIEHL RD. SUITE 100  
WARRENVILLE, ILLINOIS 60555  
PHONE: (630) 836-1700  
FAX: (630) 836-1711  
WEB: [HTTP://WWW.AECOM.COM](http://www.aecom.com)

**Parcel Boundaries**

BP Joliet Chemical Landfill Superfund Site  
Joliet, Illinois

FIGURE NUMBER:

**2**

DRAWN BY:

ML

DATE:

08/30/2010

PROJECT NUMBER:


60149353

SHEET NUMBER:

1 of 1





 Surveyed ELUC Boundary

0 375 750 1,500 Feet



**AECOM**

AECOM  
27755 DIEHL RD. SUITE 100  
WARRENVILLE, ILLINOIS 60555  
PHONE: (630) 836-1700  
FAX: (630) 836-1711  
WEB: [HTTP://WWW.AECOM.COM](http://www.aecom.com)

**Surveyed Institutional Control (ELUC) Boundary**

BP Joliet Chemical Landfill Superfund Site  
Joliet, Illinois

FIGURE NUMBER:

**3**

DRAWN BY:

ML

DATE:

08/30/2010

PROJECT NUMBER:

60149353

SHEET NUMBER:

1 of 1





**AECOM**

AECOM  
27755 DIEHL RD. SUITE 100  
WARRENVILLE, ILLINOIS 60555  
PHONE: (630) 836-1700  
FAX: (630) 836-1711  
WEB: [HTTP://WWW.AECOM.COM](http://www.aecom.com)

**Approximate Location of ELUC Area  
Transferred with Plant Sale**

BP Joliet Chemical Landfill Superfund Site  
Joliet, Illinois

FIGURE NUMBER:

**4**

SHEET NUMBER:

**1 of 1**

DRAWN BY:

ML

DATE:

08/30/2010

PROJECT NUMBER:

60149353

## **Attachment A**

### **Title Commitment**



## COMMITMENT FOR TITLE INSURANCE

ISSUED BY

### ***FIRST AMERICAN TITLE INSURANCE COMPANY***

#### Agreement to Issue Policy

We agree to issue a policy to you according to the terms of this Commitment. When we show the policy amount and your name as the proposed insured in Schedule A, this Commitment becomes effective as of the Commitment Date shown in Schedule A.

If the Requirements shown in this Commitment have not been met within six months after the Commitment Date, our obligation under this Commitment will end. Also, our obligation under this Commitment will end when the Policy is issued and then our obligation to you will be under the Policy.

Our obligation under this Commitment is limited by the following:

The Provisions in Schedule A.

The Exceptions in Schedule B.

The Conditions, Requirements and Standard Exceptions on the next page.

This Commitment is not valid without Schedule A and Schedule B.

*First American Title Insurance Company*

BY

PRESIDENT

ATTEST

SECRETARY





## **CONDITIONS**

### **1. DEFINITIONS.**

(a) "Mortgage" means mortgage, deed of trust or other security instrument.

(b) "Public Records" means title records that give constructive notice of matters affecting the title according to the state law where the land is located.

### **2. LATER DEFECTS.**

The Exceptions in Schedule B may be amended to show any defects, liens or encumbrances that appear for the first time in the public records or are created or attach between the Commitment Date and the date on which all of the Requirements (a) and (c) shown below are met. We shall have no liability to you because of this amendment.

### **3. EXISTING DEFECTS**

If any defects, liens or encumbrances existing at Commitment Date are not shown in Schedule B, we may amend Schedule B to show them. If we do amend Schedule B to show these defects, liens or encumbrances, we shall be liable to you according to Paragraph 4 below unless you knew of this information and did not tell us about it in writing.

### **4. LIMITATION OF OUR LIABILITY**

Our only obligation is to issue to you the Policy referred to in this Commitment, when you have met its Requirements. If we have any liability to you for any loss you incur because of an error in this Commitment, our liability will be limited to your actual loss caused by your relying on this Commitment when you acted in good faith to:

comply with the Requirements shown below  
or  
eliminate with our written consent any Exceptions shown in  
Schedule B or the Standard Exceptions noted below.

We shall not be liable for more than the Policy Amount shown in Schedule A of this Commitment and our liability is subject to the terms of the Policy form to be issued to you.

### **5. CLAIMS MUST BE BASED ON THIS COMMITMENT**

Any claim, whether or not based on negligence, which you may have against us concerning the title to the land must be based on this Commitment and is subject to its terms.

## **REQUIREMENTS**

The following requirements must be met:

- (a) Pay the agreed amounts for the interest in the land and/or the mortgage to be insured.
- (b) Pay us the premiums, fees and charges for the policy.
- (c) Documents satisfactory to us creating the interest in the land and/or the mortgage to be insured must be signed, delivered and recorded.
- (d) You must tell us in writing the name of anyone not referred to in this Commitment who will get an interest in the land or who will make a loan on the land. We may then make additional requirements or exceptions.
- (e) Proper documentation to dispose of such exceptions as you wish deleted from Schedule B or the Standard Exceptions noted below.

## **STANDARD EXCEPTIONS**

The following Standard Exceptions will be shown on your policy:

- (1) Rights or claims of parties in possession not shown by the public records.
- (2) Easements, or claims of easements, not shown by the public records.
- (3) Any encroachments, encumbrance, violation, variation or adverse circumstance affecting title that would be disclosed by an accurate and complete survey of the land pursuant to the "Minimum Standards of Practice," 68 Ill. Admin. Code, Sec. 1270.56(b)(6)(P) for residential property or the ALTA/ACSM land title survey standards for commercial/industrial property.
- (4) Any lien, or right to lien, for services, labor, or other material heretofore or hereafter furnished, imposed by law and not shown by the public records.
- (5) Taxes, or special assessments, if any, not shown as existing liens by the public records.
- (6) Loss or damage by reason of there being recorded in the public records, any deeds, mortgages, lis pendens, liens or other title encumbrances subsequent to the Commitment date and prior to the effective date of the final Policy.

**First American Title Insurance Company  
27775 Diehl Road, Suite 200, Warrenville, IL 60555  
Phone (866)512-9926 Fax (866)892-1147  
ALTA Commitment  
Schedule A**

Reference:

For title inquiries, please contact the Land Development Commercial Unit at 1-866-512-9926.

**File No.:** 2090548

1. **Effective Date:** August 25, 2010

2. **Policy or Policies to be issued:** **Amount:**

a. **ALTA Owner's Policy**

ALTA Std Owner Policy 1402.06 (2006) \$10,000.00

**Proposed Insured:**

To Be Furnished

b. **ALTA Loan Policy**

**ALTA Loan Policy**

None None

**Proposed Insured:**

None

3. **The estate or interest in the land described or referred to in this commitment and covered herein is fee simple and title to the estate or interest in said land is at the effective date hereof vested in:**

Amoco Chemicals Corporation n/k/a BP Amoco Chemical Company

4. **The mortgage and assignments, if any, covered by this Commitment are described as follows:**

To Be Furnished

5. **The land referred to in this Commitment is described as follows:**

**That part of the West Half of fractional Section 11 and the East Half of Section 10, all in Township 34 North, Range 9 East, of the Third Principal Meridian, described as follows:**

**Commencing at the Northwest corner of said fractional Section 11; thence South 00 degrees 22 minutes 35 seconds West, along the West line of the Northwest Quarter of said fractional Section 11, 2403.25 feet to the point of beginning; thence North 90 degrees 00 minutes 00 seconds East, 962.38 feet; thence South 73 degrees 47 minutes 05 seconds East, 443.75 feet to the line between BP Amoco Chemical Company and the state of Illinois, according to the boundary line agreement recorded March 31, 2003 as Document R2003074463; thence South 11 degrees 35 minutes 52 seconds West, 19.40 feet; thence South 13 degrees 56 minutes 18 seconds West, 102.86 feet to the North line of the Southwest Quarter of said fractional Section 11; thence South 19 degrees 28 minutes 21 seconds West, 78.15 feet; thence South 16 degrees 46 minutes 10 seconds West, 111.28 feet; thence South 08 degrees 30 minutes 22 seconds West, 127.28 feet; thence South 00 degrees 57 minutes 11 seconds West, 104.71 feet; thence South 02 degrees 34 minutes 13 seconds West, 121.65 feet; thence South 02 degrees 47 minutes 35 seconds East, 98.05 feet; thence South 00 degrees 51 minutes 31 seconds East, 100.25 feet; thence South 06 degrees 00 minutes 49 seconds East, 53.05 feet; thence South 04 degrees 06 minutes 43 seconds East, 139.59 feet; thence South 12 degrees 10 minutes 49 seconds West, 95.47 feet; thence South 34 degrees 36 minutes 35 seconds West, 118.50 feet; thence South 25 degrees 06 minutes 06 seconds West, 58.77 feet; thence South 23 degrees 51 minutes 41 seconds West, 97.50 feet; thence South 20 degrees 31 minutes 17 seconds West, 199.60 feet; thence South 39 degrees 39 minutes 38 seconds West, 157.18 feet; thence South 37 degrees 33 minutes 19 seconds West, 84.22 feet; thence South 35 degrees 05 minutes 49 seconds West, 138.34 feet; thence South 26 degrees 12 minutes 55 seconds West, 120.00 feet; thence South 18 degrees 13 minutes 40 seconds West, 55.36 feet; thence South 30 degrees 06 minutes 32 seconds West, 67.37 feet; thence South 25 degrees 44 minutes 33 seconds West, 81.98 feet; thence South 21 degrees 28 minutes 31 seconds West, 86.35 feet; thence South 27 degrees 44 minutes 29 seconds West, 34.29 feet; thence South 30 degrees 45 minutes 53 seconds West, 53.87 feet; thence South 26 degrees 47 minutes 03 seconds West, 81.44 feet; thence South 27 degrees 04 minutes 14 seconds West, 18.03 feet; thence South 26 degrees 31 minutes 58 seconds West, 36.37 feet; thence South 32 degrees 39 minutes 01 seconds West, 17.43 feet; thence South 26 degrees 44 minutes 09 seconds West, 102.05 feet; thence South 20 degrees 37 minutes 15 seconds West, 48.63 feet; thence South 29 degrees 32 minutes 46 seconds West, 146.16 feet; thence South 24 degrees 23 minutes 47 seconds West, 56.38 feet to the South line of the Southwest Quarter of said fractional Section 11; thence South 90 degrees 00 minutes 00 seconds West, along said South line, 415.53 feet to the Southwest corner of said fractional Section 11; thence North 44 degrees 15 minutes 07 seconds West, 823.09 feet; thence North 00 degrees 00 minutes 00 seconds East, 551.86 feet; thence North 14 degrees 13 minutes 59 seconds East, 175.03 feet; thence North 00 degrees 00 minutes 00 seconds East, 429.09 feet; thence North 04 degrees 13 minutes 03 seconds West, 175.63 feet; thence North 06 degrees 58 minutes 41 seconds West, 255.11 feet; thence North 00 degrees 00 minutes 00 seconds East, 718.30 feet; thence North 90 degrees 00 minutes 00 seconds East, 590.10 feet to the Point of Beginning; in Will County, Illinois.**

Note: For informational purposes only, the land is known as:

23425 Amoco Road  
Channahon, IL

**THIS COMMITMENT IS VALID ONLY IF SCHEDULE B IS ATTACHED.**



## **ALTA Commitment**

### **Schedule B**

#### **Part I**

**File No.:** 2090548

**Schedule B of the policy or policies to be issued will contain the exceptions shown on the inside front cover of this Commitment and the following exceptions, unless same are disposed of to the satisfaction of the Company:**

If any document referenced herein contains a covenant, condition or restriction violative of 42USC 3604(c), such covenant, condition or restriction to the extent of such violation is hereby deleted.

1. Rights or claims of parties in possession not shown by the public records.
2. Easements or claims of easements, not shown by the public records.
3. Any encroachments, encumbrance, violation, variation or adverse circumstance affecting title that would be disclosed by an accurate survey of the land pursuant to the "Minimum Standards of Practice," 68 Ill. Admin Code, Sec. 1270.56(b)(6)(P) for residential property or the ALTA/ACSM land title survey standards for commercial/industrial property.
4. Any lien, or right to lien, for services, labor, or material heretofore or hereafter furnished, imposed by law and not shown by the public records.
5. Taxes, or special assessments, if any, not shown as existing liens by the public records.
6. Loss or damage by reason of there being recorded in the public records, any deeds, mortgages, lis pendens, liens or other title encumbrances subsequent to the Commitment date and prior to the effective date of the final Policy.
7. General taxes and assessments for the year 2010 and subsequent years which are not yet due and payable.

Tax identification no.: 10-11-300-002-0010

Affects a portion of subject property

#### **Note for informational purposes 2009 taxes:**

1st Installment in the amount of \$3,429.83 with a status of PAID. (Due Date 06/02/2010)

2nd Installment in the amount of \$3,429.83 with a status of PAID. (Due Date 09/02/2010)

Note: If applicable, an original tax bill must be presented if taxes are to be paid at time of closing.

8. General taxes and assessments for the year 2010 and subsequent years which are not yet due and payable.

Tax identification no.: 10-11-300-002-0020

Affects a portion of subject property

**Note for informational purposes 2009 taxes:**

1st Installment in the amount of \$27,538.76 with a status of PAID. (Due Date 06/02/2010)

2nd Installment in the amount of \$27,538.76 with a status of PAID. (Due Date 09/02/2010)

Note: If applicable, an original tax bill must be presented if taxes are to be paid at time of closing.

9. Any lien, or right to a lien in favor of a property manager employed to manage the land. Note: we should be furnished either (a) an affidavit from the owner indicating that there is no property manager employed; or (b) a final lien waiver from the property manager acting on behalf of the owner.
10. Existing unrecorded leases, if any, and rights of parties in possession under such unrecorded leases.
11. Upon a conveyance or mortgage of the land, a certified copy of proper resolutions passed by the authorized representative(s) of BP Amoco Chemical Company authorizing the execution of the deed of conveyance or mortgage should be furnished.
12. We should be furnished with a certificate of Good Standing from the Illinois Secretary of State for BP Amoco Chemical Company, a Corporation of Illinois.
13. A copy of the bylaws of the following corporation should be furnished and this commitment is subject to such further exceptions, if any, as may then be deemed necessary: BP Amoco Chemical Company
14. Note: If any contemplated deed of conveyance of the land is exempt from the operation of the provisions of paragraph 1(a) of 765 ILCS 205/1, the plat act, such deed should be accompanied by a proper affidavit establishing to the satisfaction of the recorder of deeds of County, Illinois, that the conveyance is so exempt. If said conveyance is not so exempt, compliance should be had with the provisions of said paragraph 1(a).
15. Relative to the deletion of Standard Exceptions 1 through 6, we should be furnished the following:
  - a) A properly executed Extended Coverage Affidavit.
  - b) A current survey of the land, properly certified to the Company, made in accordance with (i) the accuracy requirements of a survey pursuant to the 'Minimum Standard Detail Requirements for Land Title Surveys' Jointly Established and Adopted by the American Land Title Association and American Congress on Survey and Mapping October 20, 1999; and (ii) the Laws of the State of Illinois.
  - c) A properly executed ALTA 2006 Loan and Extended Coverage Statement.
16. Plat of Vacation recorded March 31, 1997 as document no. R99-041601.
17. Illinois Environmental Protection Agency Environmental No Further Remediation Letter recorded April 5, 2004 as document no. R2004057134.

Land Use Restriction: Residential and/or Industrial/Commercial

18. Notice of Obligation to Provide Access pursuant to that certain Supplemental Consent Decree entered June 15, 2000 in the matter of the People of the State of Illinois v. Amoco Chemical Company, Case No. 94C0869 recorded July 10, 2000 as document no. R2000072758.
19. Terms, provisions, conditions and easements as contained in the Pipeline Right-of-Way Agreement made by and between BP Amoco Chemical Company and Guardian Pipeline L.L.C. recorded June 25, 2002 as document no. R2002103493.
20. Terms, provisions and conditions as contained in the Boundary Line Agreement made by and between BP Amoco Chemical Company and the State of Illinois recorded March 31, 2003 as document no. R2003074463.
21. Terms, provisions and conditions as contained in the Environmental Indemnification Agreement made by and between Amoco Chemical Company, n.k.a. BP Amoco Chemical Company and the Illinois Department of Natural Resources recorded March 31, 2003 as document no. R2003074464.
22. Terms, provisions, conditions and easements as contained in the Declaration of Easement made recorded May 9, 2003 as document no. R2003108362 and re-recorded May 23, 2003 as document no. R2003119224, as amended by document no. R2004083460 and document no. R2006066966.
23. Terms, provisions and conditions as contained in the Environmental Land Use Control made by BP Amoco Chemical Company recorded October 24, 2003 as document no. R2003268133.
24. Terms, provisions and conditions as contained in the Environmental Land Use Control made by BP Amoco Chemical Company recorded October 24, 2003 as document no. R2003268134.
25. Covenants, conditions and restrictions contained in the Declaration of Restrictive Covenants recorded as document no. R2004083461 and re-recorded as document no. R2004085028, as amended and any amendments thereto, relating to, among other things: use restrictions.
26. Terms, provisions, conditions and easements as contained in the Buyer Easement Agreement made by and between BP Amoco Chemical Company and Flint Hills Resources, LP recorded May 28, 2004 as document no. R2004095760.
27. Rights of way for drainage tiles, ditches, feeders and laterals, if any.
28. Rights of the United States of America, State of Illinois, the Municipality and the Public in and to that part of the land lying within the bed of the Des Plaines River; and the rights of other owners of land bordering on the river in respect to the water of said river.
29. Note: The Extended Coverage Endorsement will be considered for approval upon receipt and review of the requirements referenced in exception number 14 above.

NOTE for informational purposes: The final 2006 ALTA Policy issued will contain an arbitration provision. When the Amount of Insurance is \$2,000,000 or less, all arbitral matters in dispute shall be arbitrated at the option of either the Company or the Insured and will be the exclusive remedy available to the Parties. You may review a copy of the arbitration rules at <http://www.alta.org>.

**End of Schedule B - Part I**

**MY**

R2003268133\_1

**PREPARED BY:**

Gabriel M. Rodriguez, Esq.  
Schiff Hardin & Waite  
6600 Sears Tower  
Chicago, Illinois 60606

**RETURN TO:**

Steven Hernandez, Esq.  
BP America Inc.  
4101 Winfield Road  
Warrenville, IL 60555

**MARY ANN STUKEL****13P**

Will County Recorder

Will County

**R 2003268133****Page 1 of 13**

PC: Date 10/24/2003 Time 11:43:28

Recording Fees: 27.00

THE ABOVE SPACE FOR RECORDER'S OFFICE

**Environmental Land Use Control**

THIS ENVIRONMENTAL LAND USE CONTROL ("ELUC"), is made this 21st day of October, 2003, by BP Amoco Chemical Company, a Delaware corporation, ("Property Owner") of the real property located in Channahon Township, Will County, Illinois and legally described as set forth in Exhibit "A" attached hereto and incorporated by reference herein. ("Property").

WHEREAS, 415 ILCS 5/58.17 and 35 Ill. Adm. Code 742 provide for the use of an ELUC as an institutional control in order to impose land use limitations or requirements related to environmental contamination so that persons conducting remediation can obtain a No Further Remediation determination from the Illinois Environmental Protection Agency ("IEPA"). The reason for an ELUC is to ensure protection of human health and the environment. The limitations and requirements contained herein are necessary in order to protect against exposure to contaminated soil or groundwater, or both, that may be present on the Property as a result of the Property Owner's historic operation of two landfills on the on the Property. Under 35 Ill. Adm. Code 742, the use of risk-based, site-specific remediation objectives may require the use of an ELUC on real property, and the ELUC may apply to certain physical features (e.g. engineered barriers, monitoring wells, caps, etc.).

ELUC-Retained Property (v3)

18/13



R2003268133\_2

WHEREAS, Property Owner intends to request risk-based, site specific soil and groundwater remediation objectives from IEPA under 35 Ill. Adm. Code 742 to obtain risk-based closure of sites located on or near the Property utilizing an ELUC, such sites being identified by IEPA as IL ID No. 1978000001 (Will County) and IL ID No. 1970450056 (Will County).

NOW, THEREFORE, the recitals set forth above are incorporated by reference as if fully set forth herein, and the Property Owner agrees as follows:

**Section One.** Property Owner does hereby establish an ELUC on the real estate, situated in the County of Will, State of Illinois and further described in Exhibit A.

Attached as Exhibit B are site maps that show the legal boundary of the Property, any physical features to which the ELUC applies, the horizontal and vertical extent of the contaminants of concern above the applicable remediation objectives for soil or groundwater or both, and the nature, location of the source, and direction of movement of the contaminants of concern, as required under 35 Ill. Adm. Code 742.

**Section Two.** Property Owner represents and warrants that it is the current owner of the Property and has the authority to record this ELUC on the chain of title for the Property with the Office of the Recorder of Deeds in Will County, Illinois.

**Section Three.** The Property Owner hereby agrees, for itself, and its heirs, grantees, successors, assigns, transferees and any other owner, occupant, lessee, possessor or user of the Property or the holder of any portion thereof or interest therein, that:

- a. Groundwater which underlies the Property shall not be used for potable purposes
- b. No water supply well shall be installed or otherwise used for any purposes at the Property. Installation and use of wells for groundwater monitoring or remediation activities are not prohibited.

ELUC-Retained Property (v3)

2

R2003268133\_3

- c. The Property shall not be used for any agricultural, recreational or residential purpose, or in any manner that would allow children to have the opportunity for exposure to contaminants through soil ingestion or inhalation, including but not limited to educational facilities, health care facilities, child care facilities, or outdoor recreational areas.

**Section Four.** This ELUC is binding on the Property Owner, its heirs, grantees, successors, assigns, transferees and any other owner, occupant, lessee, possessor or user of the Property or the holder of any portion thereof or interest therein. This ELUC shall apply in perpetuity against the Property and shall not be released until the IEPA determines there is no longer a need for this ELUC as an institutional control; until the IEPA, upon written request, issues a new no further remediation determination approving modification or removal of the limitation(s) or requirement(s); and until and a release or modification of the land use limitation or requirement is filed on the chain of title for the Property.

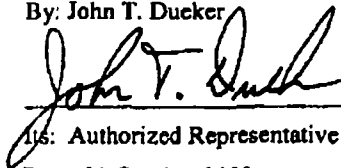
**Section Five.** Information regarding the remediation that has or will be performed by the Property Owner on the sites located on or near the Property may be obtained from the IEPA through a request under the Freedom of Information Act (5 ILCS 140) and rules promulgated thereunder by providing the IEPA with the identification numbers listed above.

**Section Six.** The effective date of this ELUC shall be the date that it is officially recorded in the chain of title for the Property to which the ELUC applies.

WITNESS the following signature:

Property Owner

By: John T. Ducker



is: Authorized Representative

Date: 21 October 2003

ELUC-Retained Property (v3)

3

R2003268133\_4

STATE OF ILLINOIS )

) SS:

COUNTY OF )

I, Steven Hernandez, the undersigned, a Notary Public for said County and State, DO HEREBY CERTIFY, that John T. Dueker, personally known to me to be the Authorized Representative of BP Amoco Chemical Company, and personally known to me to be the same person whose name is subscribed to the foregoing instrument, appeared before me this day in person and severally acknowledged that in said capacity he signed and delivered the said instrument as his free and voluntary act for the uses and purposes therein set forth.

Given under my hand and official seal, this 21st day of October, 2003.

  
Notary Public

R2003268133\_5

**Exhibit A**

(ELUC AREA RETAINED BY BP AMOCO CHEMICAL COMPANY)

The subject property is located in the Township of Chananhon, County of Will, State of Illinois and more particularly described as:

THAT PART OF THE WEST HALF OF FRACTIONAL SECTION 11 AND THE EAST HALF OF SECTION 10, ALL IN TOWNSHIP 34 NORTH, RANGE 9 EAST, OF THE THIRD PRINCIPAL MERIDIAN, DESCRIBED AS FOLLOWS:

COMMENCING AT THE NORTHWEST CORNER OF SAID FRACTIONAL SECTION 11; THENCE SOUTH 00 DEGREES 22 MINUTES 35 SECONDS WEST, ALONG THE WEST LINE OF THE NORTHWEST QUARTER OF SAID FRACTIONAL SECTION 11, 2403.25 FEET TO THE POINT OF BEGINNING; THENCE NORTH 90 DEGREES 00 MINUTES 00 SECONDS EAST, 962.38 FEET; THENCE SOUTH 73 DEGREES 47 MINUTES 05 SECONDS EAST, 443.75 FEET TO THE LINE BETWEEN BP AMOCO CHEMICAL COMPANY AND THE STATE OF ILLINOIS, ACCORDING TO THE BOUNDARY LINE AGREEMENT RECORDED MARCH 31, 2003 AS DOCUMENT R2003074463; THENCE SOUTH 11 DEGREES 35 MINUTES 52 SECONDS WEST, 19.40 FEET; THENCE SOUTH 13 DEGREES 56 MINUTES 18 SECONDS WEST, 102.86 FEET TO THE NORTH LINE OF THE SOUTHWEST QUARTER OF SAID FRACTIONAL SECTION 11; THENCE SOUTH 19 DEGREES 28 MINUTES 21 SECONDS WEST, 78.15 FEET; THENCE SOUTH 16 DEGREES 46 MINUTES 10 SECONDS WEST, 111.28 FEET; THENCE SOUTH 08 DEGREES 30 MINUTES 22 SECONDS WEST, 127.28 FEET; THENCE SOUTH 00 DEGREES 57 MINUTES 11 SECONDS WEST, 104.71 FEET; THENCE SOUTH 02 DEGREES 34 MINUTES 13 SECONDS WEST, 121.65 FEET; THENCE SOUTH 02 DEGREES 47 MINUTES 35 SECONDS EAST, 98.05 FEET; THENCE SOUTH 00 DEGREES 51 MINUTES 31 SECONDS EAST, 100.25 FEET; THENCE SOUTH 06 DEGREES 00 MINUTES 49 SECONDS EAST, 53.05 FEET; THENCE SOUTH 04 DEGREES 06 MINUTES 43 SECONDS EAST, 139.59 FEET; THENCE SOUTH 12 DEGREES 10 MINUTES 49 SECONDS WEST, 95.47 FEET; THENCE SOUTH 34 DEGREES 36 MINUTES 35 SECONDS WEST, 118.50 FEET; THENCE SOUTH 25 DEGREES 06 MINUTES 06 SECONDS WEST, 58.77 FEET; THENCE SOUTH 23 DEGREES 51 MINUTES 41 SECONDS WEST, 97.50 FEET; THENCE SOUTH 20 DEGREES 31 MINUTES 17 SECONDS WEST, 199.60 FEET; THENCE SOUTH 39 DEGREES 39 MINUTES 38 SECONDS WEST, 157.18 FEET; THENCE SOUTH 37 DEGREES 33 MINUTES 19 SECONDS WEST, 84.22 FEET; THENCE SOUTH 35 DEGREES 05 MINUTES 49 SECONDS WEST, 138.34 FEET; THENCE SOUTH 26 DEGREES 12 MINUTES 55 SECONDS WEST, 120.00 FEET; THENCE SOUTH 18 DEGREES 13 MINUTES 40 SECONDS WEST, 55.36 FEET; THENCE SOUTH 30 DEGREES 06 MINUTES 32 SECONDS WEST, 67.37 FEET; THENCE SOUTH 25 DEGREES 44 MINUTES 33 SECONDS WEST, 81.98 FEET; THENCE SOUTH 21 DEGREES 28 MINUTES 31 SECONDS WEST, 86.35 FEET; THENCE SOUTH 27 DEGREES 44 MINUTES 29 SECONDS WEST, 34.29 FEET; THENCE SOUTH 30 DEGREES 45 MINUTES 53 SECONDS WEST, 53.87 FEET; THENCE SOUTH 26 DEGREES 47 MINUTES 03 SECONDS WEST, 81.44 FEET; THENCE SOUTH 27 DEGREES 04 MINUTES 14 SECONDS WEST, 18.03 FEET; THENCE SOUTH 26 DEGREES 31 MINUTES 58 SECONDS WEST, 36.37

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FEET; THENCE SOUTH 32 DEGREES 39 MINUTES 01 SECONDS WEST, 17.43 FEET; THENCE SOUTH 26 DEGREES 44 MINUTES 09 SECONDS WEST, 102.05 FEET; THENCE SOUTH 20 DEGREES 37 MINUTES 15 SECONDS WEST, 48.63 FEET; THENCE SOUTH 29 DEGREES 32 MINUTES 46 SECONDS WEST, 146.16 FEET; THENCE SOUTH 24 DEGREES 23 MINUTES 47 SECONDS WEST, 56.38 FEET TO THE SOUTH LINE OF THE SOUTHWEST QUARTER OF SAID FRACTIONAL SECTION 11; THENCE SOUTH 90 DEGREES 00 MINUTES 00 SECONDS WEST, ALONG SAID SOUTH LINE, 415.53 FEET TO THE SOUTHWEST CORNER OF SAID FRACTIONAL SECTION 11; THENCE NORTH 44 DEGREES 15 MINUTES 07 SECONDS WEST, 823.09 FEET; THENCE NORTH 00 DEGREES 00 MINUTES 00 SECONDS EAST, 551.86 FEET; THENCE NORTH 14 DEGREES 13 MINUTES 59 SECONDS EAST, 175.03 FEET; THENCE NORTH 00 DEGREES 00 MINUTES 00 SECONDS EAST, 429.09 FEET; THENCE NORTH 04 DEGREES 13 MINUTES 03 SECONDS WEST, 175.63 FEET; THENCE NORTH 06 DEGREES 58 MINUTES 41 SECONDS WEST, 255.11 FEET; THENCE NORTH 00 DEGREES 00 MINUTES 00 SECONDS EAST, 718.30 FEET; THENCE NORTH 90 DEGREES 00 MINUTES 00 SECONDS EAST, 590.10 FEET TO THE POINT OF BEGINNING; IN WILL COUNTY, ILLINOIS.

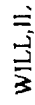
Parcel Identification Numbers (PIN) Associated with ELUC Area Retained by BP

PIN 10-10-200-001-0000  
PIN 10-11-100-001-0020  
PIN 10-10-400-004-0000  
PIN 10-11-100-001-0010  
PIN 10-10-400-005-0000  
PIN 10-10-400-003-0000

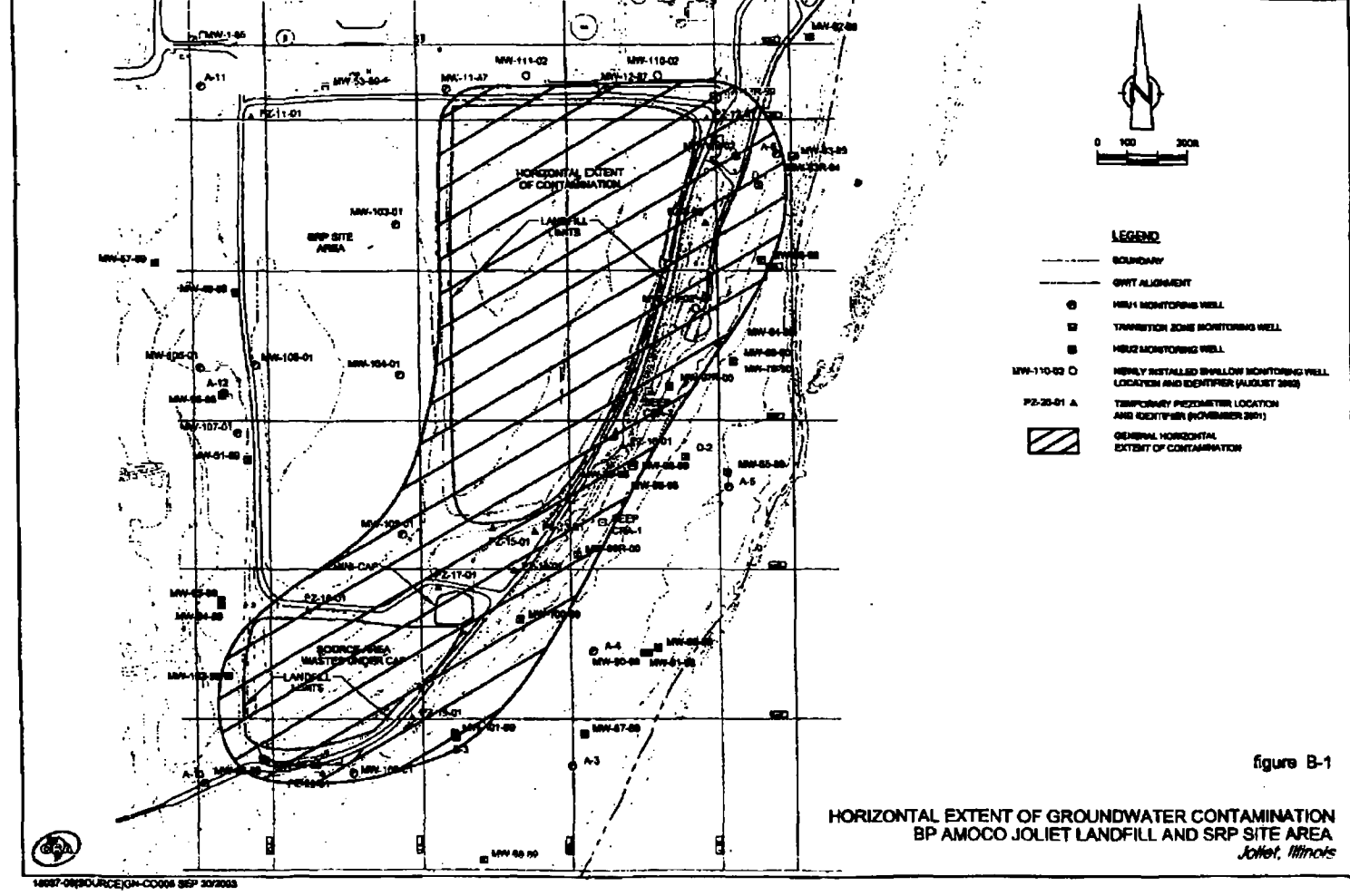
Common Address: 23425 Amoco Road Channahon, Illinois 60410

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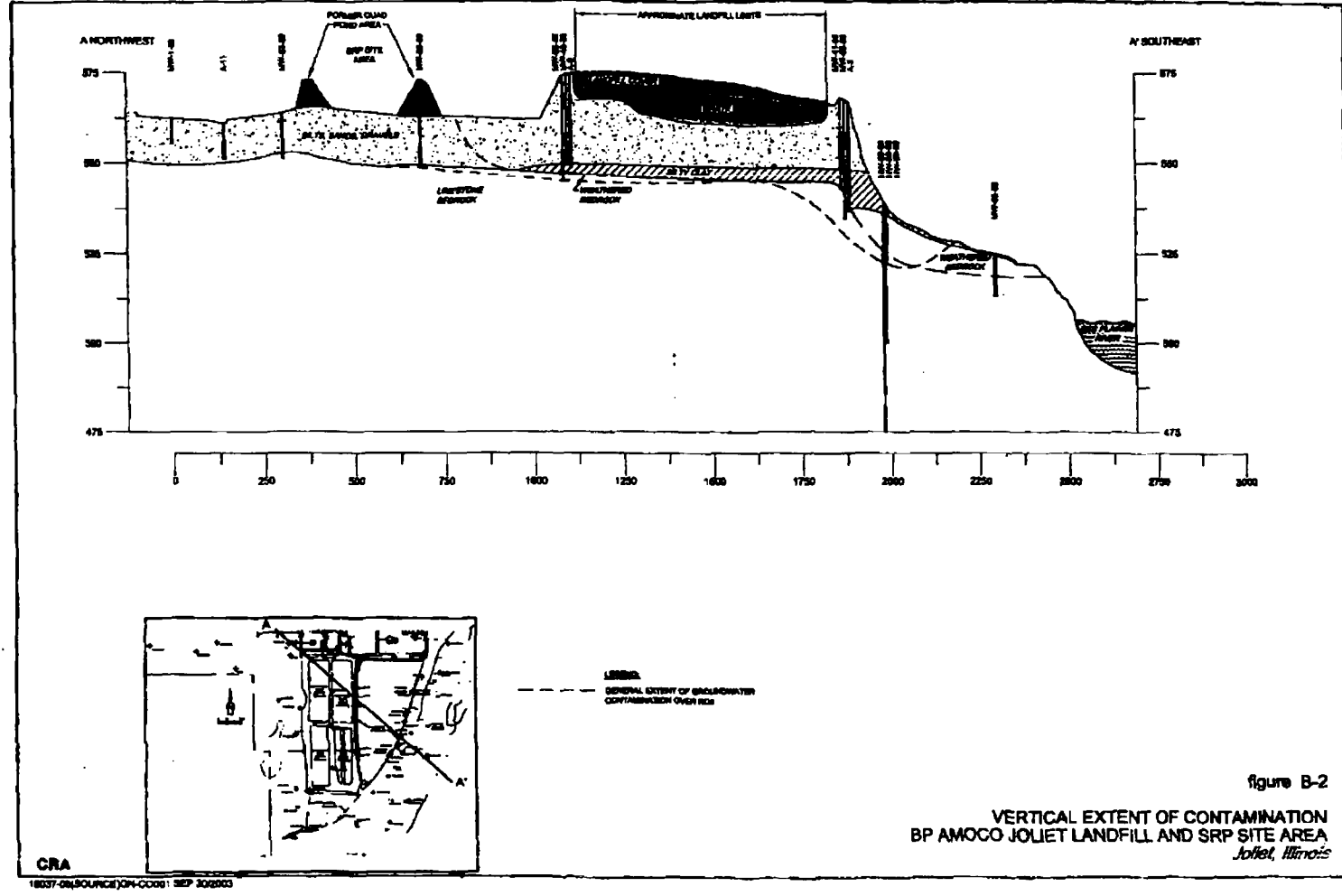
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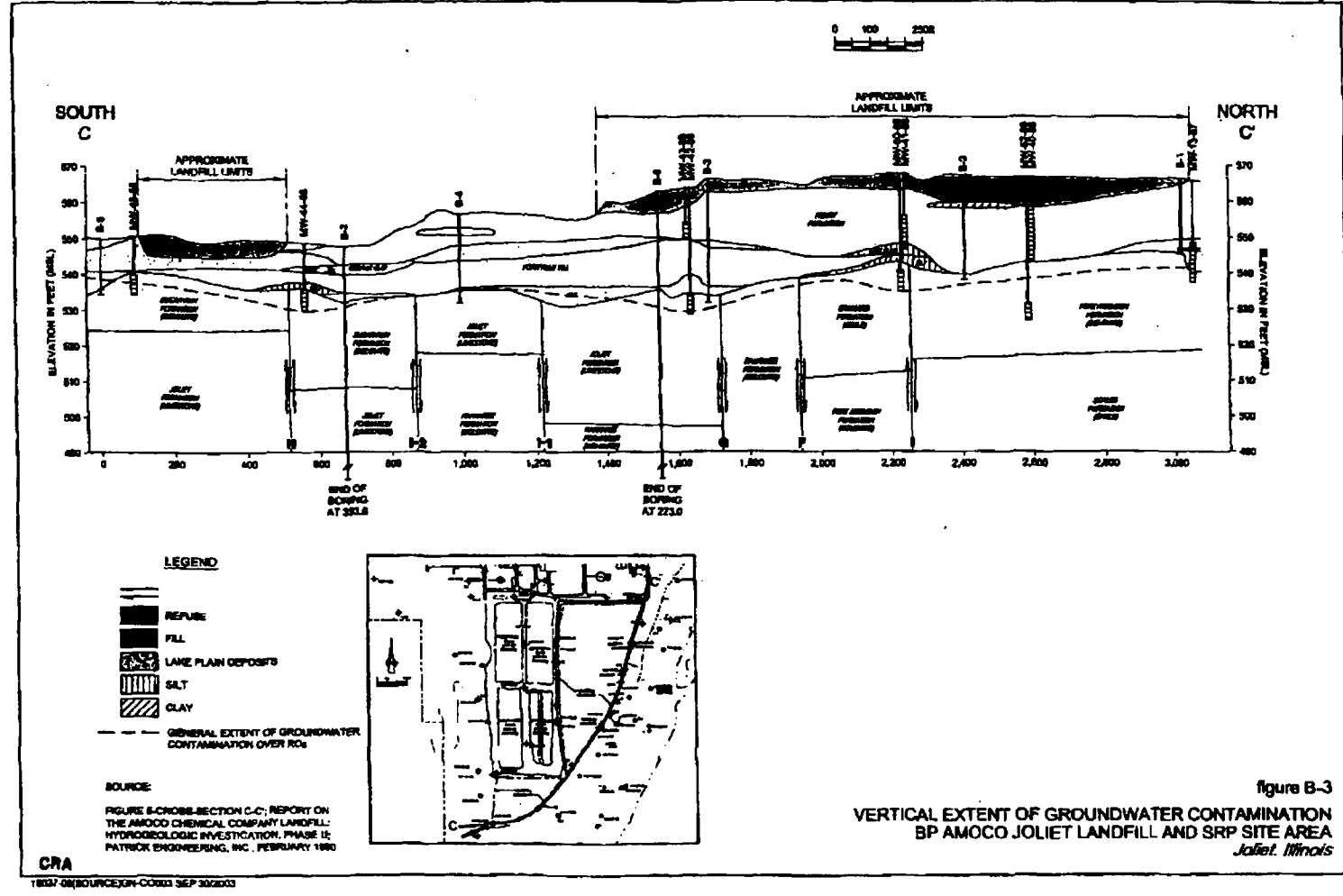


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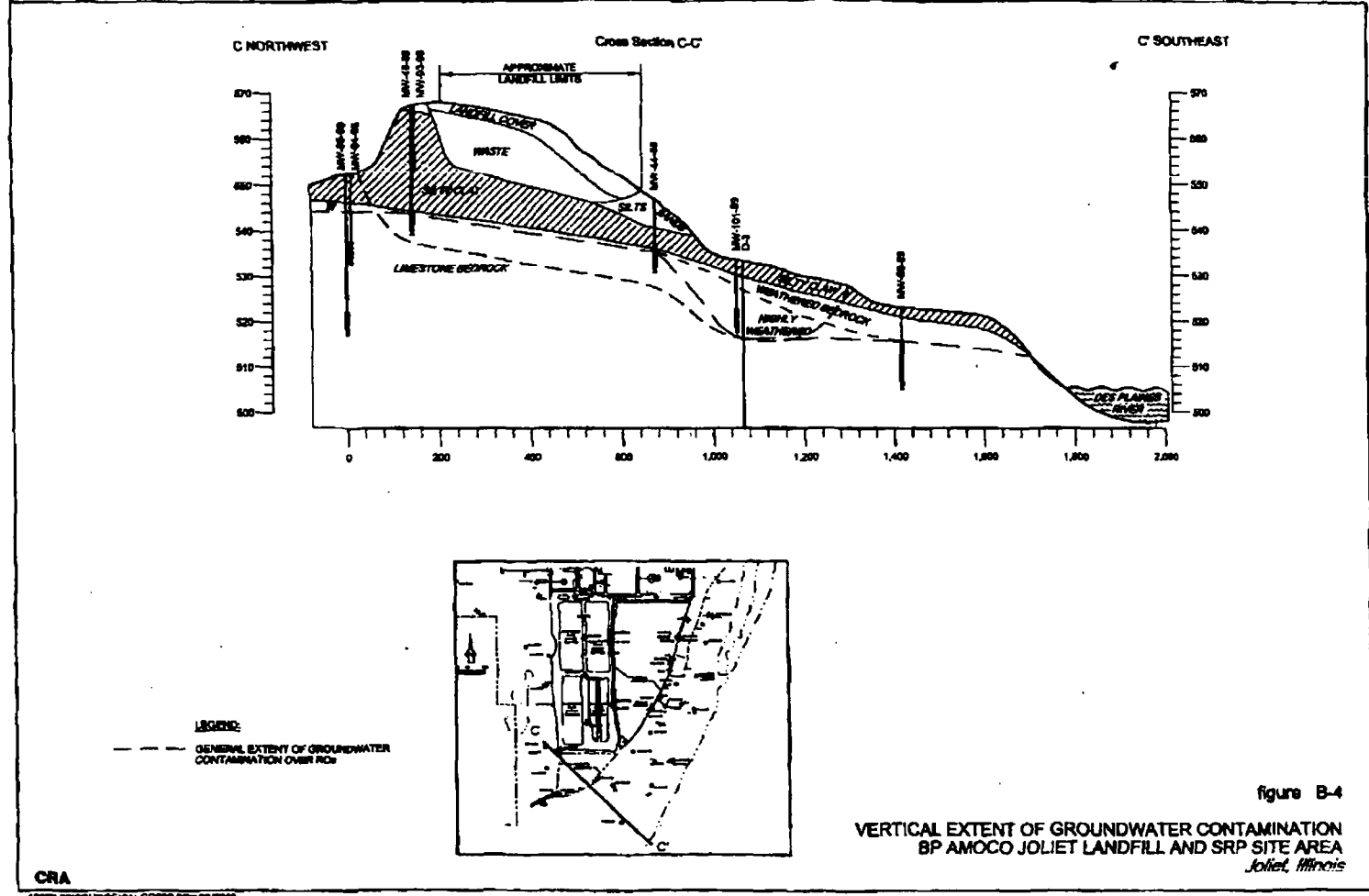


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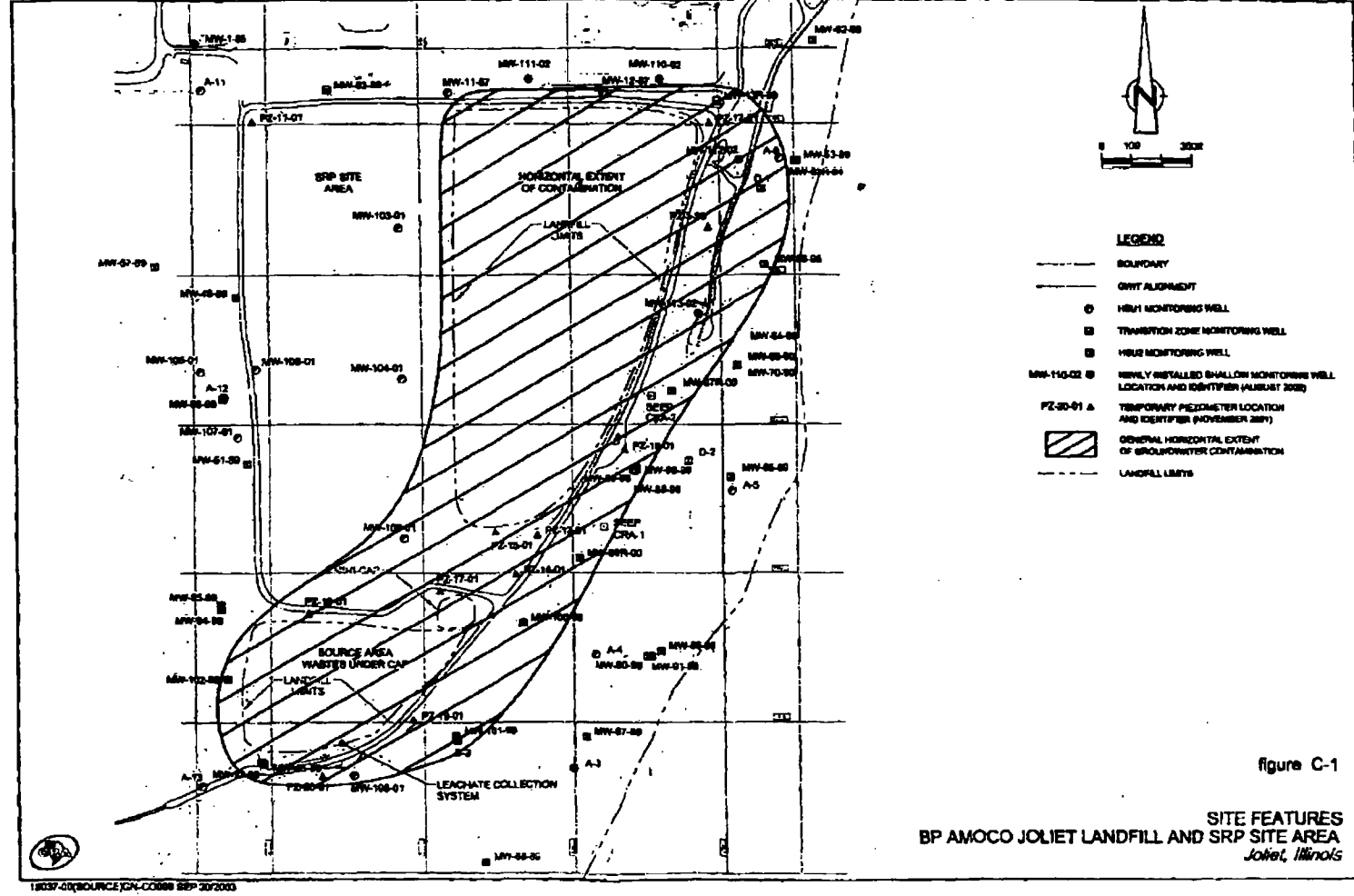


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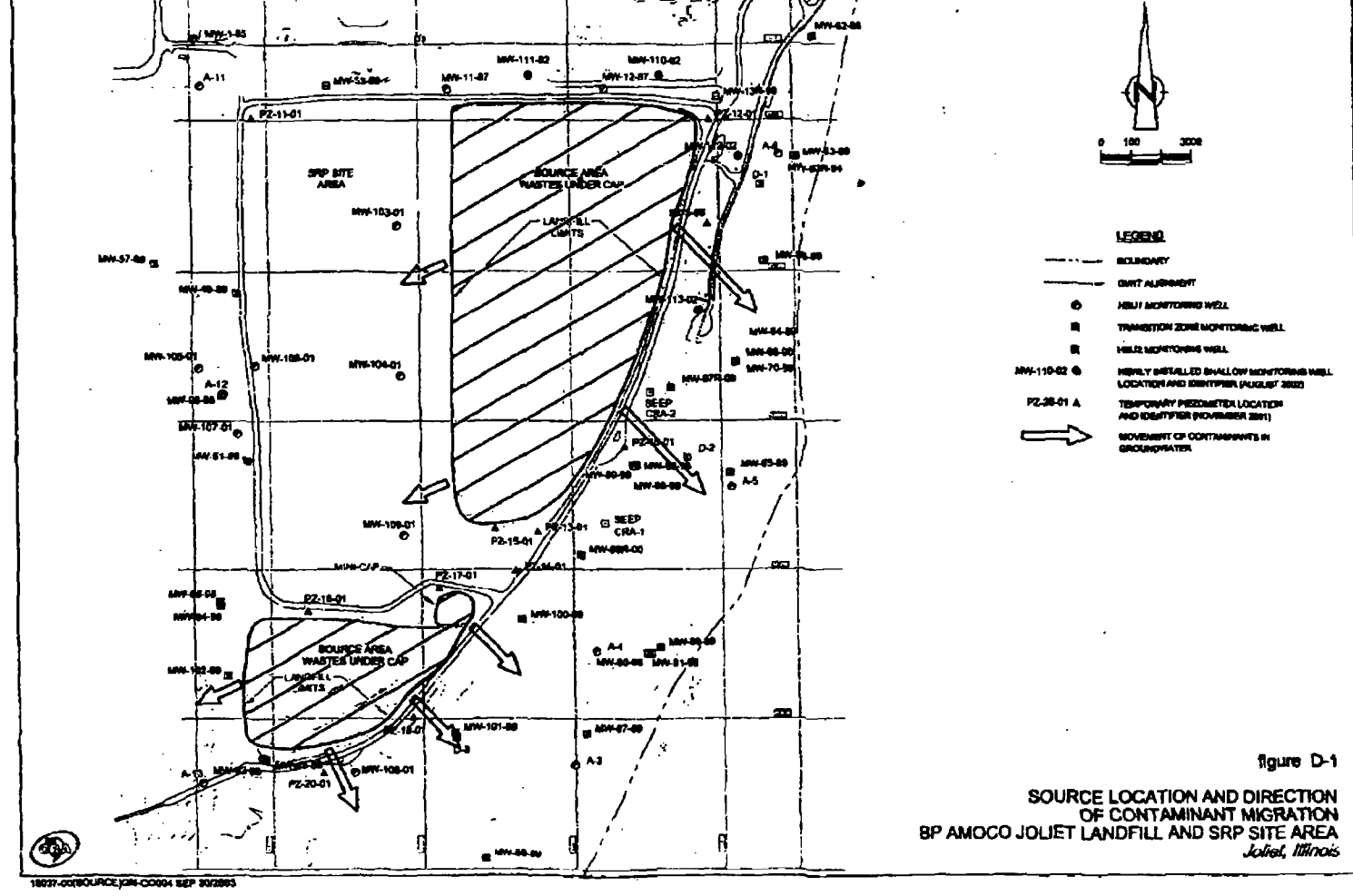


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R2003268133\_13



13

R2003268134\_1

**PREPARED BY:**

Gabriel M. Rodriguez, Esq.  
Schiff Hardin & Waite  
6600 Sears Tower  
Chicago, Illinois 60606

**RETURN TO:**

Steven Hernandez, Esq.  
BP America Inc.  
4101 Winfield Road  
Warrenville, IL 60555

**MARY ANN STUKEL****13P**

Will County Recorder  
Will County

**R 2003268134****Page 1 of 13**

PC1 Date 10/24/2003 Time 11:43:28  
Recording Fees: 27.00

THE ABOVE SPACE FOR RECORDER'S OFFICE

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ELUC Transferred Property (v3)

1/13 00



R2003268134\_2

WHEREAS, Property Owner intends to request risk-based, site specific soil and groundwater remediation objectives from IEPA under 35 Ill. Adm. Code 742 to obtain risk-based closure of sites located on or near the Property utilizing an ELUC, such sites being identified by IEPA as IL ID No. 1978000001 (Will County) and IL ID No. 1970450056 (Will County).

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Attached as Exhibit B are site maps that show the legal boundary of the Property, any physical features to which the ELUC applies, the horizontal and vertical extent of the contaminants of concern above the applicable remediation objectives for soil or groundwater or both, and the nature, location of the source, and direction of movement of the contaminants of concern, as required under 35 Ill. Adm. Code 742.

**Section Two.** Property Owner represents and warrants that it is the current owner of the Property and has the authority to record this ELUC on the chain of title for the Property with the Office of the Recorder of Deeds in Will County, Illinois.

**Section Three.** The Property Owner hereby agrees, for itself, and its heirs, grantees, successors, assigns, transferees and any other owner, occupant, lessee, possessor or user of the Property or the holder of any portion thereof or interest therein, that:

- a. Groundwater which underlies the Property shall not be used for potable purposes regardless of the depth of the well.
- b. No water supply well shall be installed or otherwise used for any purposes at the Property. Installation and use of wells for groundwater monitoring or remediation activities are not prohibited.
- c. The Property shall not be used for any agricultural, recreational or residential purpose, or in any manner that would allow children to have the opportunity for exposure to contaminants through soil ingestion or inhalation, including

ELUC Transferred Property (v3)

2

R2003268134\_3

but not limited to educational facilities, health care facilities, child care facilities, or outdoor recreational areas.

**Section Four.** This ELUC is binding on the Property Owner, its heirs, grantees, successors, assigns, transferees and any other owner, occupant, lessee, possessor or user of the Property or the holder of any portion thereof or interest therein. This ELUC shall apply in perpetuity against the Property and shall not be released until the IEPA determines there is no longer a need for this ELUC as an institutional control; until the IEPA, upon written request, issues a new no further remediation determination approving modification or removal of the limitation(s) or requirement(s); and until and a release or modification of the land use limitation or requirement is filed on the chain of title for the Property.

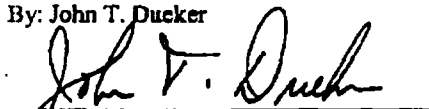
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**Section Six.** The effective date of this ELUC shall be the date that it is officially recorded in the chain of title for the Property to which the ELUC applies.

WITNESS the following signature:

Property Owner

By: John T. Ducker



Is: Authorized Representative

Date: 21 October 2003

ELUC Transferred Property (v3)

3

R2003268134\_4

STATE OF ILLINOIS )

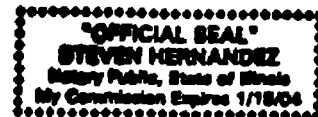
) SS:

COUNTY OF )

I, Steven Hernandez, the undersigned, a Notary Public for said County and State, DO  
HEREBY CERTIFY, that John T. Ducker, personally known to me to be the Authorized  
Representative of BP Amoco Chemical Company, and personally known to me to be the  
same person whose name is subscribed to the foregoing instrument, appeared before me this  
day in person and severally acknowledged that in said capacity he signed and delivered the  
said instrument as his free and voluntary act for the uses and purposes therein set forth.

Given under my hand and official seal, this 21st day of October 2003.

  
\_\_\_\_\_  
Notary Public



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**Exhibit A**

(ELUC AREA TRANSFERRED WITH PLANT SALE)

THAT PART OF THE NORTHWEST QUARTER OF FRACTIONAL SECTION 11, THE EAST HALF OF SECTION 10, AND THE NORTHEAST QUARTER OF SECTION 15, ALL IN TOWNSHIP 34 NORTH, RANGE 9 EAST, OF THE THIRD PRINCIPAL MERIDIAN, DESCRIBED AS FOLLOWS:

COMMENCING AT THE NORTHWEST CORNER OF SAID FRACTIONAL SECTION 11; THENCE SOUTH 00 DEGREES 22 MINUTES 35 SECONDS WEST, ALONG THE WEST LINE OF THE NORTHWEST QUARTER OF SAID FRACTIONAL SECTION 11, 1999.93 FEET TO THE POINT OF BEGINNING; THENCE NORTH 90 DEGREES 00 MINUTES 00 SECONDS EAST, 1515.73 FEET TO THE LINE BETWEEN BP AMOCO CHEMICAL COMPANY AND THE STATE OF ILLINOIS, ACCORDING TO THE BOUNDARY LINE AGREEMENT RECORDED MARCH 31, 2003 AS DOCUMENT R2003074463; THENCE SOUTH 21 DEGREES 25 MINUTES 07 SECONDS WEST, 14.81 FEET; THENCE SOUTH 16 DEGREES 35 MINUTES 49 SECONDS WEST, 141.29 FEET; THENCE SOUTH 13 DEGREES 35 MINUTES 34 SECONDS WEST, 115.32 FEET; THENCE SOUTH 11 DEGREES 43 MINUTES 58 SECONDS WEST, 118.25 FEET; THENCE SOUTH 12 DEGREES 48 MINUTES 59 SECONDS WEST, 100.22 FEET; THENCE SOUTH 11 DEGREES 35 MINUTES 52 SECONDS WEST, 53.54 FEET; THENCE NORTH 73 DEGREES 47 MINUTES 05 SECONDS WEST, 443.75 FEET; THENCE SOUTH 90 DEGREES 00 MINUTES 00 SECONDS WEST, 1552.48 FEET; THENCE SOUTH 00 DEGREES 00 MINUTES 00 SECONDS WEST, 718.30 FEET; THENCE SOUTH 06 DEGREES 58 MINUTES 41 SECONDS EAST, 255.11 FEET; THENCE SOUTH 04 DEGREES 13 MINUTES 03 SECONDS EAST, 175.63 FEET; THENCE SOUTH 00 DEGREES 00 MINUTES 00 SECONDS WEST, 429.09 FEET; THENCE SOUTH 14 DEGREES 13 MINUTES 59 SECONDS WEST, 175.03 FEET; THENCE SOUTH 00 DEGREES 00 MINUTES 00 SECONDS WEST, 551.86 FEET; THENCE SOUTH 44 DEGREES 15 MINUTES 07 SECONDS EAST, 823.09 FEET TO THE NORTHEAST CORNER OF SAID SECTION 15; THENCE SOUTH 00 DEGREES 17 MINUTES 15 SECONDS WEST, ALONG THE EAST LINE OF THE NORTHEAST QUARTER OF SAID SECTION 15, 395.47 FEET TO THE TOP OF BANK OF THE DES PLAINES RIVER; THENCE SOUTH 67 DEGREES 25 MINUTES 08 SECONDS WEST, ALONG SAID TOP OF BANK, 85.75 FEET; THENCE NORTH 44 DEGREES 15 MINUTES 07 SECONDS WEST, 1247.49 FEET; THENCE NORTH 00 DEGREES 17 MINUTES 15 SECONDS EAST, 1195.25 FEET; THENCE NORTH 89 DEGREES 37 MINUTES 20 SECONDS WEST, 201.00 FEET; THENCE NORTH 00 DEGREES 17 MINUTES 15 SECONDS EAST, 990.00 FEET TO THE NORTH LINE OF THE SOUTHEAST QUARTER OF SAID SECTION 10; THENCE NORTH 00 DEGREES 00 MINUTES 00 SECONDS EAST, 561.63 FEET; THENCE NORTH 90 DEGREES 00 MINUTES 00 SECONDS EAST, 589.12 FEET; THENCE NORTH 00 DEGREES 00 MINUTES 00 SECONDS EAST, 76.82 FEET; THENCE NORTH 90 DEGREES 00 MINUTES 00 SECONDS EAST, 570.10 FEET TO THE POINT OF BEGINNING; IN WILL COUNTY, ILLINOIS.

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**Parcel Identification Numbers (PIN) Associated with ELUC Area Transferred with Plant Sale**

PIN 10-11-100-001-0020  
PIN 10-10-200-001-0000  
PIN 10-10-400-004-0000  
PIN 10-10-400-003-0000  
PIN 10-10-400-005-0000  
PIN 10-15-200-003-0000

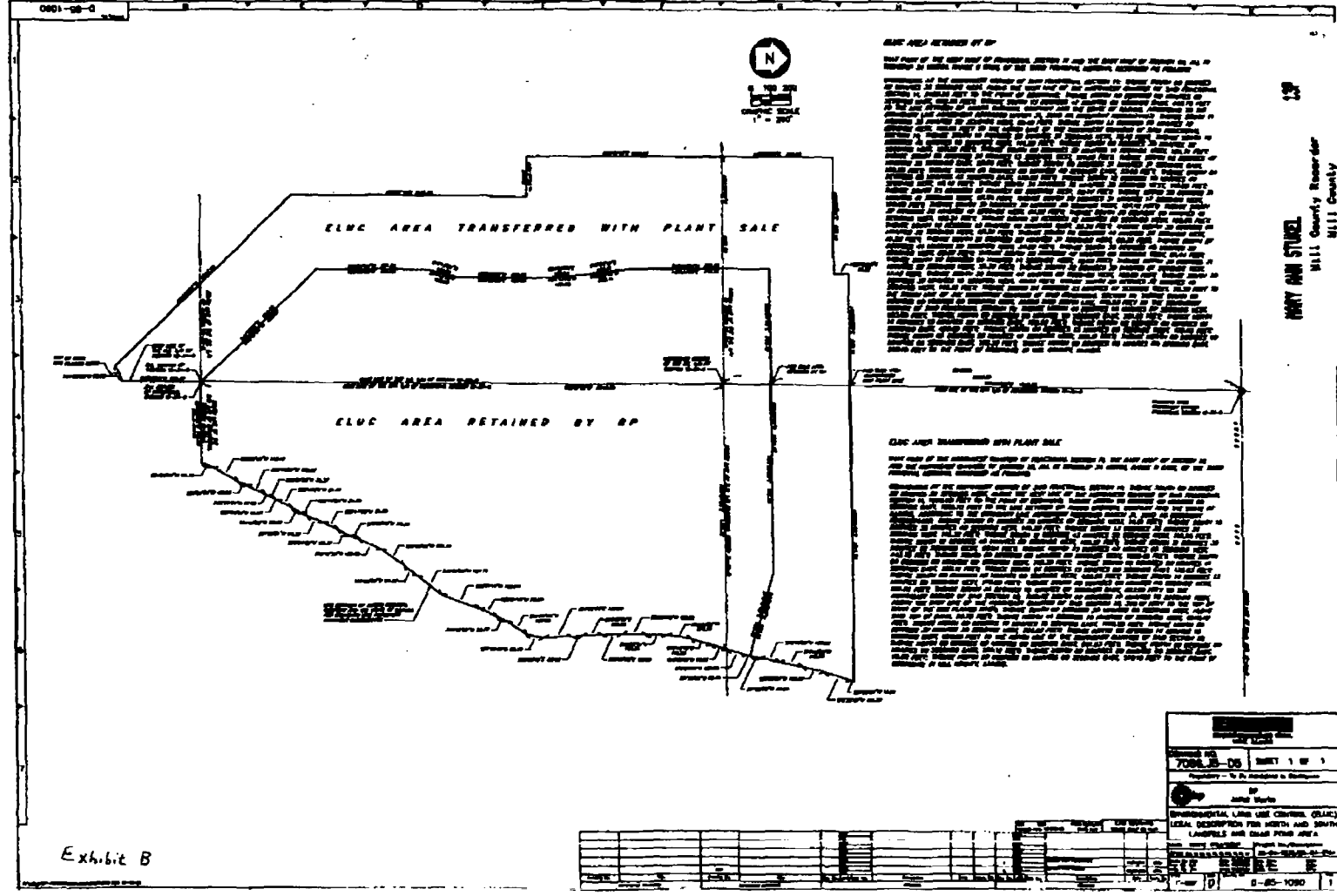
**Common Address: 23425 Amoco Road, Channahon, Illinois 60410**

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**R2003268134\_7**



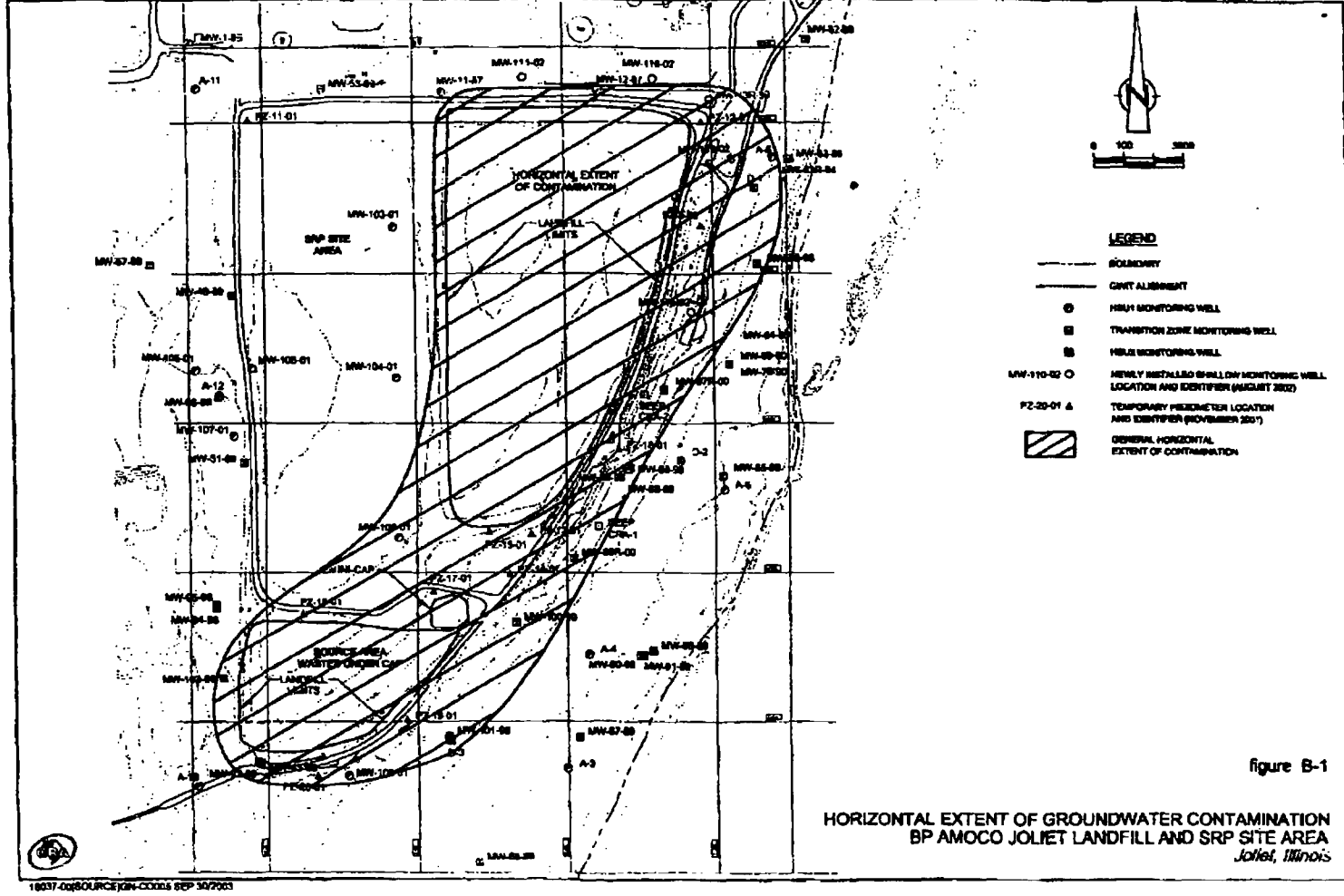
## WHAT CAN STUDENT LEARNERS

Will County Recorder  
Will County

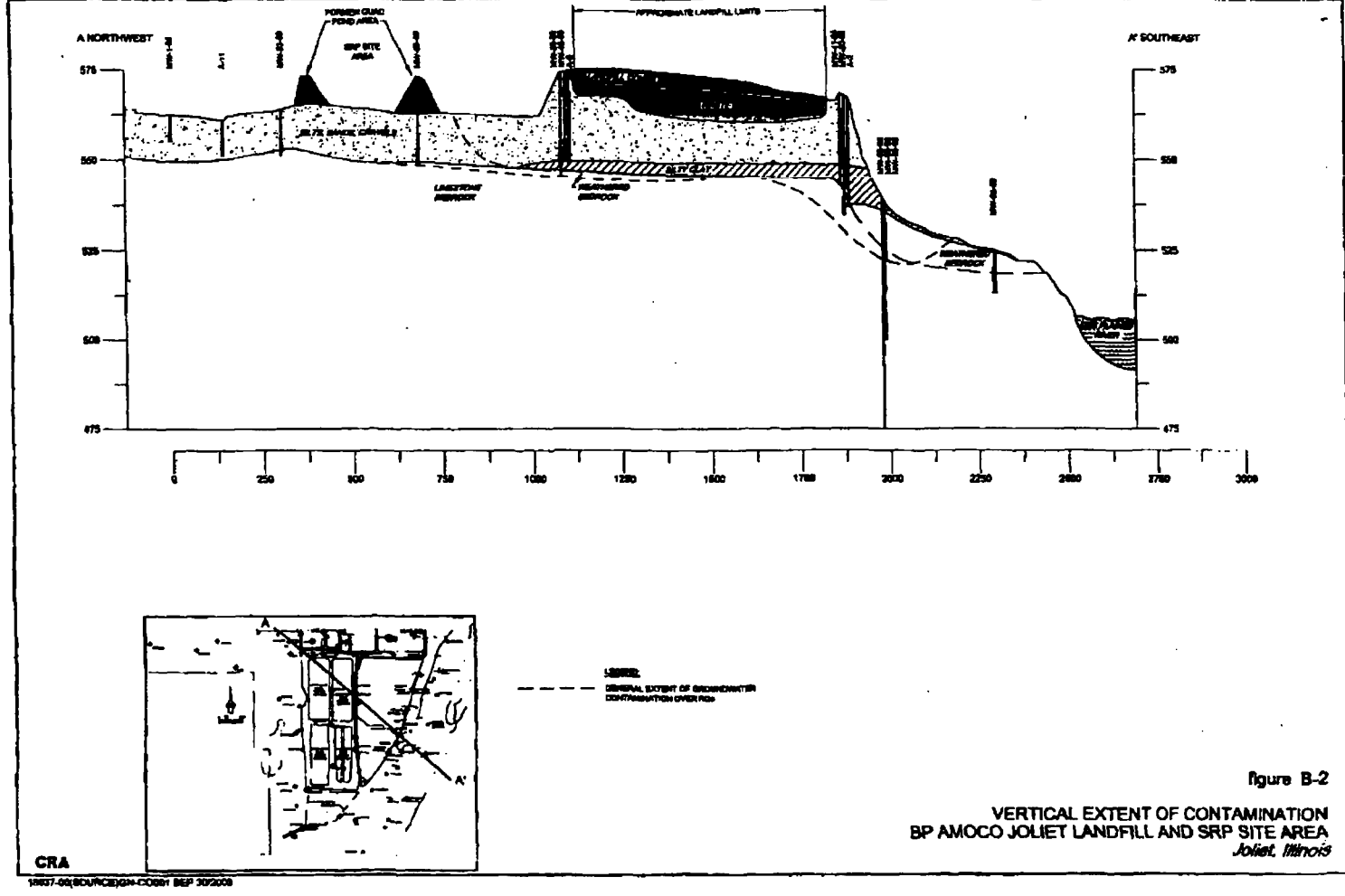
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PC1 Date 10/24/2003 Time 11:43:24  
Recording Form: 27.00

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